Accounting Review

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List of Research Projects in Accounting: 1955-1956

the Accounting Review

Editor
FRANK P. SMITH
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The Accounting Review

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SOME ARGUMENTS AGAINST THE INTER-PERIOD ALLOCATION OF INCOME TAXES*

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IN AN ARTICLE entitled "Income Taxes in Financial Statements" appearing in the April 1957 issue of THE ACCOUNTING REVIEW, Maurice Moonitz presents the case for the "allocation" of taxes on business income. The argument as relates to the inter-period distribution of these charges is as follows:

1) The corporate income tax is a cost deductible from revenues in computing period net income.

2) In corporate accounting, costs are normally measured on an accrual basis and are therefore independent of payments.

3) Period income tax cost is measured by applying an appropriate tax rate to the reported net income before tax adjusted for any permanent differences between this and taxable net income; that is, for items of revenue or expense included in the accounts but legally excluded for tax purposes, and for special deductions excluded from the accounts but allowed for tax purposes.

4) Differences between income tax costs and current tax payments which result from differences only in the timing of the recognition of net income determinants are temporary and should be accrued as assets or liabilities subject to elimination by offsetting differences in later periods.

The basic proposition is essentially that embodied in *Accounting Research Bulletin* No. 23 of December 1944; Professor Moonitz's contribution lies in the orderly development of a supporting rationale. The object of this paper is to rebut these arguments and to develop from this rebuttal an alternate and opposing thesis. Although Professor Moonitz considers also the intra-period application of the accrual doctrine, attention will here be directed to the admittedly more important question of inter-period income tax allocation.

NATURE OF THE CORPORATE INCOME TAX

There is no doubt that current practice defines the business income tax as a cost. However, the majority position is not invulnerable. In response to Professor Moonitz's challenge (page 176), it can be asserted that a dollar of corporate income tax differs from a dollar of corporate wages in that the former is paid *only if period revenues exceed period costs*. In this respect, the tax dollar is suspiciously like the dividend dollar.

One might counter Professor Moonitz's question by asking in what way a dollar of business income tax differs in its impact on the stockholder from a dollar of personal income tax. One does in fact hear reference to the "double taxation" of corporate earnings, sometimes from the same persons who maintain that the corporate tax is a cost to be passed on to the customer.

* The author has benefited from discussing the subject of this paper with Professor Myron J. Gordon of M.I.T.

There is reason to believe that the existing practice stems from considerations other than clarity of presentation of information to stockholders; and it is suggested that the treatment of income tax as a distribution of earnings would yield statement results at least as comprehensible as those currently produced. As Professor Moonitz points out, certain of the problems with which he is concerned would be thereby solved. It is noted, for example, that the distortions of net operating income discussed in his Section II (pages 177 to 178) would be as effectively eliminated in this way as by the method that he proposes.

Whether or not the foregoing arguments are persuasive, they are not necessarily sufficient. The proposition is advanced that under certain specified circumstances current tax payments are either greater or less than the amount of tax properly ascribed to the current period, and that such differences result in either the creation of an asset or a liability or the elimination of an existing asset or liability. If this is so, the phenomenon may conceivably be independent of the statement location of the tax figure, and the major portion of Professor Moonitz's thesis correspondingly independent of the initial proposition that income tax is a cost.

MEASUREMENT OF THE PERIOD INCOME TAX CHARGE

The more fundamental issue relates to the method of measuring the amount of income tax, however classified, properly associated with the activities of a given accounting period. This might be defined as the product of an appropriate tax rate or rates and either (1) the "accounting" net income before tax, or (2) an amount which for purposes of discussion we will term "adjusted net income before tax," or (3) the taxable net income. The nature of the adjustment involved in the second alternative is described in Paragraph (3) of our recapitulation of the Moonitz argument (page 357). The purpose of the adjustment is to arrive at the dollar amount subject to tax in *some* period, but identified in the firm's accounts with the activities of the *current* period.

The first of the above-stated possibilities can be eliminated on the ground that it produces a meaningless figure not descriptive of any past, current, or future applications of funds. The second represents the proposition under discussion. The third, while obviously subject to challenge, yields a clearly significant result, specifically the legal liability for tax payment (or under certain conditions the claim to tax refund) arising in the current period. The proposition that this is *the* tax amount properly identified with the current period reflects the present majority practice and cannot be dismissed as trivial.

Thus, we have two contending definitions of period income tax, both meaningful in the sense that what each measures can be readily described, and both workable as demonstrated by the fact of current usage. Under such conditions, which are by no means uncommon in this field, one selection criterion is consistency with other accounting measurements. In this respect, the "allocation" method appears open to attack.

The so-called "liability" held to result from a current "under payment" of the period income tax does not fit the common definition of a creditor claim. This is not a matter of the degree of certainty surrounding the amount of the supposed debt. It is simply that no one owes anyone anything in the presently accepted sense of the word "liability." The amount shown under this caption represents, not what the firm *is* liable for, but what the firm *expects to be* liable for at some future time.

Since the item in question arises out of failure to make a present payment, an

analogous treatment might be that of showing an expected future liability for wages whenever a labor-saving machine is *not* purchased. The closest parallel in actual practice is perhaps the credit to a category such as "Deferred Maintenance Reserve." However, when such an account is employed, it is usually shown on the balance sheet either as a subdivision of retained earnings or as a contra-asset, not as a liability.

The "prepaid income tax" presumed to arise from an "overpayment" presents similar conceptual difficulties. While it purports to be an advance payment, it is unlike any conventionally recorded receivable in that it is explicitly not recognized as such by the recipient. This characteristic may not be damning, but it is at least different.

If these alien "assets" and "liabilities" are to be admitted to the accounting fold, it should be with foreknowledge that they may not be readily susceptible to objective quantification. It is believed that in this connection Professor Moonitz understates the magnitude of the problem. Consider, for example, what is presently the most important case, that involving the use of an accelerated depreciation method for tax purposes and straight-line depreciation for reporting.

We are offered the following proposition:

> The amount of depreciation taken for tax purposes in the current period is greater than the charge recorded in the accounts. However, over the whole life of the asset, the total amount of depreciation charged for both tax and accounting purposes must be the same. Therefore, in some future period or periods, the depreciation for tax purposes must be less than the book amount. When this happens, the present tax reduction will be offset by increased payments.

Under the tax "allocation" procedure, disclosure and explanation of this phenomenon calls for recognition of a "liability for future tax payments." But of what amount?

Two unknowns essential to an answer are: (1) the tax rate schedules that will be effective in the periods of offset, and (2) the levels of earnings that the firm will experience in these future periods. Professor Moonitz apparently believes that these determinants can be forecast with an acceptable degree of accuracy. His opinion is perhaps open to serious question only as regards the small corporation whose earnings may be expected to fall in the graduated tax range.

A more impressive difficulty stems from the fact that taxable earnings are measured, not with respect to *each* depreciable asset, but with respect to *all* such assets held by the enterprise. Given either an expanding plant or a reasonably uniform rate of plant replacement, the accelerated charges on newly acquired assets may, in any future period, equal or exceed the then decelerated charges on the old assets.[1]

Consequently, the postulated ultimate increase in tax payments may be distributed over future periods in an indeterminate manner, or may be entirely deferred until such time as the firm ceases fully to replace worn out and obsolete plant elements. We are therefore faced with the necessity of forecasting, not only future tax rates and earnings levels, but also the pattern of future acquisitions of depreciable assets. (We might add government tax policy to this list, since future rejection of accelerated depreciation for tax purposes would of course radically alter our expectations.)

Given continuation of the pertinent features of the existing tax law, we can fore-

[1] For further discussion of this point see, for example: Evsey D. Domar, "Depreciation, Replacement, and Growth," *The Economic Journal*, March 1953. Note that because of the conditions under which accelerated depreciation methods have been accepted for tax purposes, established companies may initially expedite the write-off of only a portion of their assets. Hence, in the majority of cases, the replacement of old assets not subjected to accelerated depreciation may have much the same effect as would expansion in a newly established firm.

see certain distinct patterns of results: (1) In an expanding firm, especially a large one, the amount of tax payments deferred will tend to increase steadily. (2) In a large and stable company, the amount of tax deferment built up in the first few years after adoption of an accelerated depreciation method for tax purposes will remain essentially constant. (3) In the smaller firm using major capital equipment and replacing spasmodically, the amount will vary irregularly in a manner difficult to predict. (4) In a company where the scale of operations is contracting, the amount will decline, but actual offsetting increases in tax payments may well not materialize because of a corresponding contraction in taxable earnings.

Finally, even if we are willing to concede that all the necessary forecasts can be made with reasonable accuracy, we have still a major barrier to surmount. Unless the expected time lag between the present smaller tax payment and the future larger one is short, the "liability for future tax payment" cannot be meaningfully stated at the absolute dollar amount of the expected future outlay. It must instead be carried at its *present worth*. Unfortunately, as indicated above, it appears that the more important cases tend to involve substantial time intervals.

The problem is to find an appropriate discount factor. A zero rate, which seems to be that implied in Professor Moonitz's discussion, necessitates the untenable assumption that there is no advantage to the firm in deferring the tax payment. Going loan rates are useless because the risk elements are not comparable. It appears, therefore, that we have no alternative but to accept management's evaluation of the sacrifice cost to the firm of giving up liquid funds. While this is by no means absurd, it does represent a substantial departure from the objectivity criterion of established auditing practice.

While Professor Moonitz mentions certain of the difficulties described above, he appears to dismiss the most important of them with the comment that the circumstances are no different from those involved in the refunding of contractual obligations (page 181). We believe that the two situations are markedly different, and that the analogy is therefore potentially misleading.

Long-term interest-bearing debts are, or at least should be, carried at their present worths based on actual expectations as to payment dates and amounts. The rate of discount is established in the financial market and presumably reflects as adequately as possible the value of money under the prevailing conditions of demand, supply, and risk. If the expectation as to maturity date and amount are altered by refunding, the effects of this change emerge no later than the point of retirement in the form of a residual unamortized discount (or premium) and a call premium.

In the bond case, the periodic coupon payments tend to be the primary determinant of the present worth, and the maturity date can often be extended indefinitely without significant effect. In the tax case, since no such interim payments are involved, the present worth calculation is heavily dependent on the "maturity" date. In fact, it appears that in many of the more important cases the issue may, for all practical purposes, resolve itself for this very reason. If the expected time to ultimate offset is very long, the application of any reasonable discount rate will reduce the purported liability to a negligible quantity.

UTILITY

Accounting is first and foremost utilitarian. Its end objective is to describe in the most useful manner the status and performance of various economic entities. Consequently, the ultimate test of any specific methodology is the usefulness, essentially the informational content, of the

resulting data. Viewed in this light, the case for inter-period income tax allocation is not convincing.

It appears that the kinds of forecasts necessary to implement the "allocation" doctrine of necessity depend heavily on the subjective judgments of the forecaster. Substitution of the accountant's or management's interpretations for the historical facts is undesirable stewardship accounting practice for the same reason that editorialized news reporting is poor journalism: it inevitably reduces, and sometimes distorts, the informational content of the report. If such essentially subjective measurements are rigidly systematized to obtain "objective subjectivity," as is to some extent the practice with respect to depreciation, the original purpose in making them is largely obviated.

Even in those cases where the foregoing criticism is not applicable, the "allocation" procedure is complex and, particularly because of its inconsistency with existing rules and definitions, not readily comprehensible to even the well-informed statement reader.[3] To justify increased complexity, it should be necessary to demonstrate a significant increase in informational content over that obtainable by any simpler and more direct means. Assuming that the principal contender is simply period-by-period disclosure of the present differences between taxable and reported net income before tax, it is held that the "allocation" method fails to meet this test.

Finally, it is suggested that widespread use of this method might well yield a general disutility by perpetuating differences between "accounting" and taxable business earnings. Those differences that appear to be inevitable do not, for the most part, involve inter-period offsets; and those that are self-cancelling over time often result from either questionable accounting practices or questionable tax provisions.

Accelerated depreciation, for example, is not necessarily simply a tax "gimmick." Its adoption in one form or another was urged before the income tax was a matter of concern, and many of the arguments presented in support of its use for tax purposes are no less valid when applied to corporate reporting. Or again, note that the historically important problem described by Professor Moonitz on page 178 involves the treatment of unamortized discount and call premium on refunded bond issues. These items were deducted for tax purposes but carried forward in the accounts. Without debating the merits or demerits of the accounting practice followed, we need simply note that it was not dictated by accepted accounting conventions. (See *Accounting Research Bulletin* No. 42, Chapter 15.) In both of these cases, resolution of the differences, and hence of the problems, might conceivably be accomplished by mirroring the tax practice in the accounts.

CONCLUSION

Disclosure in published financial reports of differences between the taxable net income for the period and the net income before tax stated or implied in the financial statements is highly desirable. From the foregoing analysis it is concluded that such disclosure is not best accomplished by inter-period income tax allocation. The following alternative procedure is offered for consideration.

It is proposed that *all* causes for difference between the taxable and reported net income before tax of a period be shown in a separate supporting schedule, that these be classified as permanent or temporary, and that with respect to temporary (timing) differences the expected period or periods of offset be indicated.

[3] For fuller description of the ramifications of the tax allocation concept see Hans J. Shield, "allocation of Income Taxes," *The Journal of Accountancy*, April 1957.

PRELIMINARY MASTER'S DEGREE CURRICULUM

REPORT OF TASK COMMITTEE

The Task Committee on Standards of Accounting Instruction of the American Accounting Association was originated to study present college offerings in accounting, to find out what standards are being followed, and ultimately, to suggest desirable standards of accounting instruction. The predecessor committee recommended certain standards for undergraduate accounting curricula in THE ACCOUNTING REVIEW for January, 1954. The present Committee surveyed the various colleges and universities to ascertain the standards in use. This survey was reported in THE ACCOUNTING REVIEW for January, 1956.

The Committee is now undertaking a study of graduate programs in accounting. First a pilot questionnaire was sent to a few schools to discover the problems that would be encountered. It was found that master's programs and doctoral programs would need to be studied separately. Accordingly a questionnaire dealing with the master's program was prepared and circulated to 180 schools. This list of 180 schools was believed to include all schools that might offer a Master's degree with a concentration in accounting. There were 133 replies of which 86 indicated that a master's program with a major or concentration in accounting is being offered. It is presumed that nearly all of the schools that failed to reply are not now offering such a program. It may thus be concluded that the results of the questionnaire rather completely cover the present practices at the master's level.

After the questionnaire results had been tabulated, it became apparent to the Committee that graduate program objectives and curricula are less definitely fixed than is true for undergraduate programs. It is felt that additional information is needed to draw on as a basis for the setting of standards. Nevertheless, the data compiled are very interesting and the Committee decided to prepare a preliminary report to make this information immediately available to those who are currently restudying their own programs. It is anticipated that a more definitive study will follow.

In the remainder of this report, the questionnaire questions are stated (in italics); then the replies are summarized. Committee comments are made after some questions. These comments are partly explanatory and partly interpretative. They are also partly in the nature of opinions or conclusions expressed by one or more committee members. This presentation is tentative, insofar as the comments express opinions, since the committee has not completed its study of master's programs and as a committee has reached no final conclusions or agreed upon recommended standards.

ANALYSIS OF REPLIES

The Sample

1,Q: *Do you offer a Master's degree with a concentration or specialization in accounting?*

1,A: Yes, 86; No, 47.

Comment: In view of the fact that a follow-up letter was sent to schools failing to respond to the first request for information which were listed as having granted Master's degrees by the Department of Health Education and Welfare, 1954–55, it is concluded that the 86 schools replying include nearly all of the schools in the United States that offer Master's degrees with a concentration in accounting.

Purpose of Program

2,Q: *Do you have a master's program intended primarily as a program of graduate study based upon prior completion of a Bachelor's degree in business administration or commerce?*

2,A: Yes, 76; No, 7; No answer, 3; Total, 86.

3,Q: *Do you have a master's program intended primarily as a program of graduate study in business administration intended for those whose undergraduate work involved little or no study of business administration or commerce?*

Graduate Faculty

4,Q: *Do you have a specially constituted graduate faculty?*

4,A: Yes, 45; No, 40; No answer, 1.

Comment: It may be impressive that somewhat over half of the schools have a specially constituted graduate faculty. On the other hand, it is quite possible that the regular faculty of some schools is superior to the specially constituted graduate faculty of other schools.

5,Q: *If you have a specially constituted graduate faculty, please indicate your requirements for admission to it:*

a. *In terms of degrees*	
5,A:	
Ph.D. generally	12
Master's and C.P.A. or Ph.D.	19
M.B.A. and C.P.A.	1
C.P.A.	1
Master's	5
Degree of same or higher level than students are seeking	1
A second degree or material completion of requirements	1
Elected by Graduate Faculty	1
No answer	5
Total	46

b. *and/or rank*	
Instructor	1
Professorial rank and Lecturers	1
Assistant Professor	13
Associate Professor	11
Assistant Professor generally	3
Offer only graduate work	1
No answer	16
Total	46

c. *and/or other*	
Research and publications	10
Approval by Graduate Dean or Faculty	5
Effectiveness in teaching graduate students	2
Professional standing	7
At least ½ time teacher	1
Must regularly teach one or more graduate courses	1
C.P.A. or attorney	3

3,A: Yes, 25; No, 38; Not primarily, 2; No answer, 21; Total, 86.

Comment (on 2 and 3): It would seem that a master's program in accounting should have some advantage over a bachelor's program but this requires that the master's candidate must do significant work beyond that required for the undergraduate degree. It is interesting to note that 76 out of the 86 schools have a master's degree based upon a business administration undergraduate degree or expect (according to comments on questionnaires) the candidate to make up during his graduate program any course deficiencies in his undergraduate program. Some of these same schools offer a separate master's program not based upon an undergraduate degree in business administration.

Comment: Selection of a teacher to conduct graduate programs must be based upon teaching skill and exceptional competence in the area to be covered. Degrees and certificates are only partial indications of competence and by themselves indicate nothing with respect to teaching skill.

Since the C.P.A. certificate is often attained by the superior student during his fourth year of study for the bachelor's degree, one wonders why this attainment is regarded by 24 out of 46 schools as an accreditation to conduct courses for advanced degrees.

A point that may well be made in view of the general respect for the Ph.D. degree is that just any Ph.D. degree does not qualify a person to conduct graduate work in accounting. For such a position it would seem desirable that the teacher have had

accounting as his major field and have done his dissertation in the accounting area.

6,Q: *Are persons who are themselves working toward graduate degrees permitted to teach courses taken by Master's degree candidates?*

6,A: No, 66; Yes, 18; No answer, 2.

7,Q: *If persons who are themselves working toward graduate degrees are permitted to teach courses taken by Master's degree candidates, what are their requirements?*

a. *In terms of degrees*		b. *and/or rank*		c. *and/or other*	
7,A:		Associate Professor	3	Superior ability	1
Ph.D. Candidates	1	Assistant Professor generally	4	Business teaching experience	1
Admitted to Ph.D. program	3	Lecturer or instructor	2	C.P.A.	1
Terminal degree	3	Lecturer or associate	1	Business experience	1
Master's generally	8	No specification	1	Specialized training	1
Bachelor's	1	Any	1	Exceptional competence	1
None specified	1	No answer	6		
No answer	1	Total	18		
Total	18				

Comment on 6 and 7: The precise degrees that a person has are not as important in staffing as the competence of the teacher in the subject matter of the course and his skill in teaching. In many cases persons working on graduate degrees may not have the command of subject matter nor the teaching skill to teach other graduate students even in elementary courses but this does not constitute a sufficient basis for excluding all graduate students from teaching other graduate students. If exceptions are to be made, however, great care must be taken in judging competence.

Grading Systems

8,Q: *Please indicate your system of grading, by letters or other designation, and give the approximate numerical range for each grade on scale of 0–100%.*

8,A: The most common grading scale is: A, 90–100; B, 80–89; C, 70–79; D, 60–69. The second most common scale is: A, 93–100; B, 85–92; C, 77–84; D, 70–76. C and D are often considered failing for graduate students. The scale used is not important in arriving at a judgment of the quality of work attained at the school.

9,Q: *If you require a foreign language for the Master's degree, please indicate:*

a. Degree	b. Language(s) required	c. If a substitute is allowed

9,A: Of the 86 schools, 75 do not require any foreign language for the Master's degree. French or German are the languages usually required by the eleven schools indicating a language requirement with Spanish allowed as a substitute by several.

Doctor's Programs in Accounting

10,Q: *Do you offer a Doctor's degree with a concentration or specialization in accounting?*

10,A: Yes, 20; No, 62; Some may be taken, 1; No answer, 3.

Comment: The Committee expects to undertake a special survey of the Ph.D. degree at a later date.

MASTER'S PROGRAMS BASED UPON BACHELOR'S DEGREES IN BUSINESS

Of the 86 schools, 76 reported that they offered a Master's degree program with a concentration in accounting based upon the assumption that the candidate had completed a Bachelor's degree in business administration or commerce. These 76 degree programs were described as follows:

11,Q: *Please indicate degree to which the program described below applies:*

M.A. ________ *M.B.A.* ________
M.S. ________ *Other* ________

11,A: M.A., 5; M.B.A., 41; M.S., 22; Multiple degrees, 6; Master of Accounting, 1; No answer, 1.

Comment: Comparison with Question 17 below shows that the letters of the degree have little significance. M.B.A. seems to be by far the most common designation for master's degrees granted to candidates taking work in business administration and commerce.

Admission Prerequisites

12,Q: *As a prerequisite to admission to this master's program, what is the minimum amount of undergraduate work required in each of the following areas?*

12,A: Common prerequisites are (medians of original data):

Accounting	16 hours
Business Law	6
Business Statistics	3
Economics	6
Finance	3
Management	3
Marketing	3
Total	40

A requirement in business writing is also common.

13,Q: *Please indicate the minimum number of semester hours required, exclusive of thesis (if any).*

13,A:

Hours	*Number of Schools*
8–12*	4
13–15	0
16–18	0
19–21	3
22–24	31
25–27	7
28–30	21
31–33	2
34–36	3
Not specified	5
Total	76

* Some schools give credit hours on a different basis for graduate courses than for undergraduate courses.

Comment: It may be concluded that 24 hours plus a thesis or 30 hours for schools not requiring a thesis are by far the most common arrangements.

Thesis Requirements

14,Q: *Is a thesis required?*

14,A: Yes, 45; No, 23; Yes for one degree and no for another, 2; May be required, 1; May substitute, 5.

15,Q: *If a thesis is not specifically required, may a candidate elect to write one?*

15,A: Yes, 24; No, 5; No answer, 47.

Comment on 14 and 15: Of the 76 schools in this category, 45 require a thesis and 24 allow the student to elect a thesis. Only 5 indicate total disapproval of the thesis.

It is quite possible that some institutions do not require a thesis as a matter of expediency rather than as a matter of principle. Apparently the omission sometimes occurs because the institutions are unwilling to assume the load of supervising thesis preparation. On the other hand, it is sometimes argued that term reports may serve the same purposes of developing research and writing abilities.

Course Requirements

16,Q: *Please indicate the minimum and maximum number of hours of accounting required and allowed of graduate and undergraduate courses exclusive of thesis for those with and those without undergraduate concentration in accounting.*

16,A: Those with undergraduate majors in accounting would be required to take for the Master's degree from 6 to 17 graduate hours in accounting* (median 9 hours) and would be permitted to take from 8 to 24 hours* (median 15 hours). These students would be required to take from 0 to 14 undergraduate course hours* (median 6) and would be permitted to take from 0 to 20 hours* (median 9). Those who did not have an accounting concentration at the undergraduate level would be required to take from 3 to 18 graduate hours* of accounting courses for their master's degree with a concentration in accounting

* The top and bottom 10%'s were omitted to exclude the most obvious cases of misunderstanding.

(median 9) and would be permitted to take from 6 to 24 graduate hours* (median 14). These students would be required to take from 9 to 19 hours* of undergraduate courses in accounting (median 6) and would be permitted to take from 0 to 24* hours (median 12).

Comment: Since there is a great similarity in the requirements for the two groups in the number of hours, it may be concluded that many schools do not give credit for the Master's degree for courses that would have been required of an undergraduate major in accounting. The median requirements for the two classes of students are exactly the same. The allowable undergraduate course credit is slightly more for non-majors—3 hours.

	Medians	
	Accounting Majors	*Non-Majors*
Graduate Courses		
Required	9	9
Permitted	15	14
Undergraduate Courses		
Required	6	6
Permitted	9	12

MASTER'S PROGRAMS NOT BASED UPON BACHELOR'S DEGREE IN BUSINESS

Of the 86 schools reporting, 25 indicate that they have a degree program with an accounting concentration not based upon an undergraduate degree in business administration or commerce.

17,Q: *Please indicate degree to which the program described below applies:*
M.A. ________ *M.B.A.* ________
M.S. ________ *Other* ________

17,A: M.A., 2; M.B.A., 15; M.S., 5; M.L., 1; Multiple degrees, 2.

Comment: Any thought that the M.B.A. degree represents an exclusively graduate school approach to business is clearly erroneous. There is almost the same proportion of M.B.A. degrees given by schools basing their Master's degree on an undergraduate business specialty (See 11) as the above proportion of M.B.A. degrees.

Admission Prerequisites

18,Q: ***As a prerequisite to admission to this Master's program, what is the minimum amount of undergraduate work required in each of the following areas?***

18,A: Although these degrees are not based on an undergraduate degree in business, it is expected that the students will have certain basic courses (medians of raw data):

Accounting	6 hours
Business Law	6
Business Statistics	3
Economics	6
Finance	3
Management	3
Marketing	3
Total	30 hours

Comparison with the data for the courses expected of the undergraduate major in business (See 12) shows exactly the same distribution of hours except that the former is expected to have 10 hours more of accounting.

Degree Requirements

19,Q: ***Please indicate the minimum number of semester hours required, exclusive of thesis (if any).***

19,A:

Hours	*Number of Schools*
No answer	1
8*	1
22–24	3
25–27	2
28–30	10
31–33	1
34–36	1
44	1
48	1
52	1
60	2
30–60 depending on degree	1
Total	25

* Some schools give credit hours on a different basis for graduate courses than for undergraduate courses.

Comment: The common requirement

* The top and bottom 10%'s were omitted to exclude the most obvious cases of misunderstanding.

seems to be 30 hours and no thesis. It would seem that some schools have one degree with a thesis required while others have two degrees, one with and one without a thesis. Still others merely have a degree without a thesis. The required hours are nearly identical except for 5 or 6 schools that appear to have a two-year program.

Thesis Requirements

20,Q: *Is a thesis required?*
20,A: Yes, 8; No, 15; No answer, 2.
21,Q: *If a thesis is not specifically required, may a candidate elect to write one?*
21,A: Yes, 8; No, 7; No answer, 10.
Comment: on 20 and 21: Of the 25 schools in this group, 8 require a thesis and 8 more permit a thesis as a part of the program. Since 2 did not reply, it would seem that 16 give direct or tacit approval of the thesis out of 23 schools answering—70% approximately.

Course Requirements

22,Q: *Please indicate the minimum and maximum number of hours of accounting required and allowed of graduate and undergraduate courses exclusive of thesis for those with and those without an undergraduate concentration in accounting.*
22,A: Those with undergraduate majors in accounting would be required to take for the Master's degree from 4 to 16 graduate course hours* (median 11) and would be permitted to take from 8 to 27 hours* (median 18). These students would be required to take from 0 to 12* undergraduate course hours (median 0) and would be permitted to take from 0 to 33 such hours* (median 12).

Those who did not have an accounting major prior to entry upon the Master's degree program would be required to take from 3 to 18 graduate course hours* (median 10 hours) and would be permitted to take from 3 to 30 hours* (median 18). These students would be required to take from 0 to 16 undergraduate course hours* (median 8) and would be allowed to take from 0 to 24 of such hours* (median 12).
Comment: Since the degree studied here is designed for non-business majors at the undergraduate level, it is natural to assume that few accounting majors would be expected to enter such programs. It is understandable that nearly half of the schools indicate no difference in the requirements for accounting majors entering nor is it remarkable that the others make provisions for those accounting majors who may choose to enter this master's program.

	Medians	
	Accounting Majors	*Non-Majors*
Graduate Courses		
Required	11	10
Permitted	18	18
Undergraduate Courses		
Required	0	8
Permitted	12	12

Aside from an undergraduate course requirement of 8 hours the course programs appear identical.

GENERAL COMMENTS

It would appear that the background expected of the candidate for the Master's degree is the same (except for accounting) regardless of the design of the program. It would further appear that little difference is made between the requirements in accounting courses for the Master's degree regardless of whether the candidate had an undergraduate accounting major. Slightly more accounting is required on those master's programs not based upon an undergraduate business degree although the increase is about 3 hours rather than the 10 hours these students were not expected to have had at the undergraduate level.

The survey indicates little agreement as to the requirements for a Master's degree in accounting. What preliminary prepara-

* Top and bottom 10%'s omitted to exclude exceptional cases.

tion should the student have? What subjects should he study? What calibre of courses ought the candidate take? What should be the qualifications of persons assigned to instruction of Master's candidates? Judging from replies received, it seems that a Master's degree from some schools is worth no more than a Bachelor's degree from others.

The committee members wish to express their appreciation to all who cooperated in returning the pilot graduate study questionnaire and the master's program questionnaire. Without their generous help, these statistics could not have been compiled.

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THE SIGNIFICANCE OF THE CONCEPT OF THE CORPORATION IN ACCOUNTING ANALYSES

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Many accountants have expressed the opinion that analyses of transactions must, in certain significant respects, be based on a particular underlying concept of the corporation. The so-called *proprietary theory* of accounting is based on the corporation conceived as a convenient arrangement for dealing with an association of individual proprietors. In contrast, the *entity theory* of accounting embraces the notion of the corporation as something which is quite separate and distinct from the individual security holders. More recently, it has been suggested that, because both the structure and behavior of the large corporation are different from that visualized under the proprietary and entity theories, the large corporation be looked upon as a social institution rather than as merely a separate entity or an association of proprietors. This view is the basis for a proposed *enterprise theory* of accounting.[1]

But, although avowedly a particular concept of the corporation may form the basis for a proposed "theory" of accounting, it is not always clear in what way the proponents' consequent analyses are consistent with the concept advocated and inconsistent with other "theories." Criticisms of existing theories have tended to be vague and general. Indictments such as that the proprietary theory is "seriously defective" as a framework for corporation accounting,[2] that "neither the proprietary theory nor the entity theory is a wholly satisfying frame of reference for accounting" because each relies upon a "personality,"[3] and that the "two traditional frames of reference that are found in accounting theory" are inadequate,[4] have not been supported by demonstrations of the undesirable results of accounting analyses based on the corporate concepts to which objections are made.

Furthermore, irreconcilable conflicts of interpretation, inadequately explained, appear in the literature. For example, Paton and Paton state that the proprietary approach "underlies, at least implicitly, the persisting minority view" that "stock dividends" represent income to the recipient stockholders.[5] In direct contradiction, Husband declares that from the proprietary point of view "no dividend—cash or stock—is . . . to be interpreted as income" to the recipient.[6]

Even within the same publication apparent contradiction may be found. In *An Introduction to Corporate Accounting Standards*, it is reasoned that "emphasis on the entity point of view . . . requires the treatment of business earnings as the income of the enterprise itself until such time as transfer to the individual participants has been effected by dividend declaration" and yet it is also asserted that the "accumulated balance of the income ac-

[1] See Waino W. Suojanen, "Accounting Theory and the Large Corporation," The Accounting Review, July, 1954, pp. 391–398.

[2] William Andrew Paton, *Accounting Theory* (New York: The Ronald Press Company, 1922), p. iii.

[3] William J. Vatter, *The Fund Theory of Accounting and Its Implications for Financial Reports* (Chicago: The University of Chicago Press, 1947), p. 7.

[4] Suojanen, *loc. cit.*, p. 391.

[5] William A. Paton and William A. Paton, Jr., *Corporation Accounts and Statements* (New York: The Macmillan Company, 1955), p. 3.

[6] George R. Husband, "The Entity Concept in Accounting," The Accounting Review, October, 1954, p. 557.

count" is an "acknowledged element of stockholders' equity."[7]

It is the purpose of this article, therefore, to examine critically the extent to which significantly unique results are obtained when differing concepts of the corporation are made the basis for the analyses of transactions involving changes in the accounts relating to the interests of corporate security holders.

In order to limit this presentation, only three such transactions will be considered here. Those selected are transactions involving interest charges, income taxes, and dividends—transactions which are sometimes held to affect the measurement of income and sometimes treated as distributions of income. There has been considerable controversy in the accounting literature with respect to the nature of these items and their analysis should therefore constitute an acceptable test of the significance of the underlying corporate concept and the validity of the approach here employed.

CONCEPTS

Four concepts of the corporation will be utilized. It is believed that the first two of these constitute the concepts underlying the proprietary and entity theories of accounting, respectively, as those theories are generally propounded. The third concept is the notion underlying the enterprise theory of accounting. And the fourth concept seems to be the one most frequently reflected in current accounting practice.

It is to be noted, however, that the analyses which are presented subsequently in this article are based solely on the *concepts of the corporation* as stated and are not necessarily intended to represent interpretations of the theories of accounting which have been proposed by various individuals presumably relying on such concepts. It is contended here, however, that the adoption of a particular concept of the corporation as a basis for an accounting theory dictates the analyses of certain transactions.

The concepts of the corporation to be considered are:

1. *The concept of the corporation as an association of common shareholders who are the owners of the corporate assets and obligors of the corporate debts*. According to this view, the legal entity of the corporation is merely a device of a representative nature by means of which the association's business affairs may be conveniently administered with certain legal privileges and within certain legal limitations. This notion suggests that accounts be constructed and maintained in such a way as to facilitate the preparation of financial reports for the information of the common shareholders comprising the association.

2. *The concept of the corporation as a separate and distinct entity existing and operating for the benefit of all long-term equityholders*. Because the corporate assets are considered owned by the corporation itself and all corporate obligations are considered the obligations of the corporation itself, there is no significant distinction to be made between common shareholders, preferred shareholders, bondholders, and other long-term obligees. In accordance with this view, financial reports represent an accounting by the corporation to all those having claims against it, i.e., to all equityholders. For convenience, this will be referred to as the "entity concept."

3. *The concept of the corporation as a social institution*. In this case, the question of ownership is not of primary importance. The unique feature of this concept lies in the assumed corporate objective of economic growth and development in the interest of society. It is to be noted that the incorporated social institution may also be viewed separately and distinctly from the contributors of its capital. But, rather

[7] W. A. Paton and A. C. Littleton, *An Introduction to Corporate Accounting Standards* (American Accounting Association, 1940), pp. 8 and 105, respectively.

than implying that financial reports be made by the corporate entity to that entity's investors, the social institution concept implies that corporate financial reports be directed to the public in general.

4. *The term "corporation" as merely indicating a prescribed set of legal relations.* It is assumed that the accounting analyses suggested by the preceding three concepts should result in the reporting of information which is basically economic in nature. However, much of current generally accepted accounting analysis has been legislated in the form of corporation statues and the *Internal Revenue Code.* It is appropriate, therefore, that the legal effects of transactions be contrasted with the economic effects consistent with the other concepts.

Instrument of purpose

INCOME

In order to examine the effects of the four concepts of the corporation on the accounting for the measurement and distribution of income, it is essential that the concept of corporate income contemplated be clearly established.

Basically, income is an economic concept. One lucid exposition of the economic notion of income is that of J. R. Hicks:

> The purpose of income calculations in practical affairs is to give people an indication of the amount which they can consume without impoverishing themselves. Following out this idea, it would seem that we ought to define a man's income as the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning. Thus when a person saves he plans to be better off in the future; when he lives beyond his income, he plans to be worse off. Remembering that the practical purpose of income is to serve as a guide for prudent conduct, I think it is fairly clear that this is what the central meaning must be.[8]

The measurement of how "well off" an individual or business unit is implies the determination *in real terms* of the capitalized value of prospective receipts. The uncertainty of prospective receipts and the uncertainty with respect to price levels and relevant interest rates have thus far prevented practicing accountants from measuring income in that sense. To a great extent, accountants have ignored price levels, interest rates, and future prospects and have accepted *invested cost* in terms of numbers of dollars as an appropriate valuation. For the most part, at the date of acquisition invested cost is the market value and presumably market value represents the best estimate of the capitalized value of prospective receipts (of cash or valuable services). Subsequent changes in outlook, the value of the dollars invested, and the relevant rate of interest are ignored for accounting purposes.

Accordingly, for the purposes of this study, Hicks' definition of income is modified to define *corporate income* during any given period of time as the maximum amount, expressed in dollars, which, if there were no additional investments during the period, could be distributed by the corporation to its beneficiaries without impairing the cumulative dollar amount of cash or other assets which were invested in the corporation at the beginning of the period.[9]

The concept of the corporation dictates those who are properly deemed to be corporate "beneficiaries." The common shareholders are the beneficiaries of the corporation conceived as an association of co-owners; according to the entity concept all long-term equityholders are the beneficiaries of the separate and distinct corporate entity; the entire populace is the beneficiary of the social institution; and all owners

[8] J. R. Hicks, *Value and Capital* (2d ed.; London: Oxford University Press, 1950), p. 172.

[9] A comprehensive discussion of concepts of business income may be found in Charles E. Johnson, "The Concept and Measurement of Business Income for Corporate Reporting," (Unpublished Ph.D. dissertation, University of Minnesota, 1952).

of shares of stock, preferred as well as common, are looked upon as corporate beneficiaries from a legal viewpoint.

The concept of the corporation likewise determines "the cumulative dollar amount of cash or other assets" which may properly be considered to constitute *investment* at the beginning of the period in contrast to obligations or debt. In the association of common shareholders, typically, the investment at the beginning of the period consists of the original common shareholders' investment contributions and any accumulated undistributed earnings. According to the notion referred to as the entity concept, investment includes the equities of bondholders and other types of long-term obligees, preferred shareholders, and common shareholders. In the case of the corporation conceived as a social institution, all sources of corporate capital (assets) represent investment in the enterprise. And from a legal viewpoint, the total of stated capital, paid-in surplus, and earned surplus, constitutes investment.

In practice, periodic corporate income is measured by aggregating the corporate revenues (the flow of funds into the corporation as a result of furnishing goods or services) and gains during a period of time and deducting therefrom the corporation's expenses (costs identified with that period's revenues) and losses during the same period. The difference, assuming a successful period, represents corporate income (the number of dollars which could have been distributed to corporate beneficiaries during that period without impairing the cumulative dollar investment).

INTEREST CHARGES

The magnitude of interest charges on short-term obligations is likely to be relatively insignificant and immaterial. Our attention, therefore, will be directed primarily to an examination of the effects of concepts of the corporation on the accounting for the interest charges on long-term securities, such as bonds. The same line of reasoning, however, can be applied to the interest charges on short-term obligations.

To the incorporated association of common shareholders, bonds represent a liability or debt of the corporation. Interest charges on that debt are a financial expense—the interest charges of a given revenue period represent a cost of financing the general operations of the corporation during that period. Common shareholders are looked upon as the beneficial owners, and interest charges must be deducted from revenues and gains in measuring the number of dollars which the corporation could distribute to the common shareholders without impairing their cumulative investment.

On the other hand, in measuring the income of the corporation conceived as a separate and distinct entity existing and operating for the benefit of long-term equityholders, interest charges are not an expense. The proceeds of bond issues represent the investment and measure the equity of the owners of those bonds. Interest payments made by the corporation to bondholders constitute the distribution of their contractual share of corporate income. Paton and Littleton have adopted this view:

> "To management the bondholders' dollars and the money furnished by the stockholders become amalgamated in the body of resources subject to administration, and the net income of the enterprise consists of the entire amount available for apportionment among all classes of investors. Interest charges, from this standpoint, are not operating costs but represent a distribution of income, somewhat akin to dividends."[10]

It is to be noted, however, that this view may lead to perplexing results. What is the nature of interest payments made to bond-holders during a period in which corporate income is inadequate or in which corporate losses have occurred? If any un-

[10] Paton and Littleton, *op. cit.*, pp. 43–44.

distributed earnings have accumulated, such interest payments may still be looked upon as distributions of income earned in prior periods but, if there are no accumulated undistributed earnings, clearly interest payments cannot constitute income distributions. From the so-called entity point of view, interest payments made under these circumstances must be looked upon as a return or withdrawal of investment. But it cannot be a return of the bondholders' investment because their investment equity is not reduced by these payments; it is the investment equity of the common shareholders which is diminished. It seems somewhat illogical to treat such interest payments as a withdrawal of investment when the equityholders' investment withdrawn is that of the common shareholders and the equityholders receiving the withdrawal are bondholders. Under these conditions is it not difficult to consider the common shareholders and the bondholders as being members of a single equityholding group having common interests in the corporation?

Interest charges represent a valid economic cost of the use of the capital supplied by bondholders to the incorporated social institution. In determining the dollar amount which could have been distributed to society, perhaps in the form of lower prices or improved product, without impairing the cumulative number of dollars invested in the corporate institution, interest charges must be deducted on an equal footing with wages and rents.

From the viewpoint of law, interest charges are expenses which are deducted in the process of income measurement. Corporate bonds are looked upon as liabilities or debt and bond interest charges are deductible in determining the incomes of corporations for deferral income tax purposes.[11] It is generally accepted that where corporate statutes refer to a corporation's income, as in the case of provisions for legal payment of dividends "out of its net earnings for its current or for the preceding fiscal year,"[12] interest charges represent deductions in the income measuring process.

INCOME TAXES

In general, property taxes, payroll taxes, and other taxes, the amounts of which are independent of the results of operations, create no special problems—they are accepted as expenses or production costs, whichever is applicable. On the other hand, perhaps because of the contingent nature of their occurrence and magnitude, the treatment of income taxes is less standardized.

To those advocating the concept of the corporation as an association of individuals, income taxes are clearly an expense. Their contingent nature does not alter the necessity of deducting income taxes from revenues and gains in measuring the amount which could be distributed to the common shareholders without impairing their cumulative investment. This view is in agreement with that of the Committee on Accounting Procedure of the American Institute of Accountants: "Income taxes are an expense that should be allocated, when necessary and practicable, to income and other accounts, as other expenses are allocated."[13]

A consistent application of the entity concept leads to the same conclusion. In measuring the income of a corporation, income taxes must be deducted. The state and federal governments are not corporate investors. Accordingly, the number of dol-

[11] *Internal Revenue Code of 1954*, s. 163.

[12] *Minnesota Business Corporation Act* (1933), s. 301,22, Subd. 2(3). See also *California Corporation's Code*, (1947), s. 1500(b) for another example of similar provisions.

[13] American Institute of Accountants, Committee on Accounting Procedure, "Restatement and Revision of Accounting Research Bulletins," *Accounting Research Bulletin*, No. 43 (1953), p. 88.

lars which could be distributed to corporation equityholders without impairing their cumulative investment is clearly adversely affected by the imposition of income taxes. According to Paton:

"Taxes are a somewhat anomalous element in business finance. Taxes are coerced; their amount is largely outside the control of management; they do not follow price trends closely; they can hardly be said to measure the value of services received and utilized in production. Taxes, therefore, are not strictly congruous with ordinary expenses. However, taxes are clearly a deduction from or charge against revenues in the process of determining net income."[14]

In accordance with the definitions used in this study, income taxes are expenses indirectly identified with the revenues of the separate and distinct corporate entity as an unavoidable cost of general business operations during a given revenue period.

If the assertion is accepted that from the legal viewpoint the stockholder group, preferred shareholders as well as common shareholders, are looked upon as corporation beneficiaries, income taxes must also be treated as expenses in the determination of the income of the corporation. There is little doubt that when the Minnesota statute, cited earlier, refers to "net earnings," earnings *net of* income taxes, among other things, is intended. In line with the definition of income utilized in this study, the periodic amount distributable to all classes of shareholders without impairment of their cumulative investment is determined after the deduction of income taxes.

Presumably the members of society are beneficiaries of the social institution. Ideally then, corporation operations should be designed to furnish desirable products at cost (including a fair return to suppliers of capital), in which case there would be no corporate income (economic profit). This is approximately the goal of the various state and federal agencies which have been charged with the responsibility of regulating the operations of companies in the field of public utilities.

As an alternative to direct regulation, the imposition of income taxes might be looked upon as a method of siphoning off a substantial portion of corporate income to finance the services provided by the several levels of government to the ultimate benefit of society. This kind of rationale is particularly applicable to the form of taxation known as "excess profits taxes" which was imposed during both World Wars and the Korean conflict. Marginal tax rates as high as 85.5 per cent have been justified on the basis of the social repugnancy of profits created by bloodshed.

From this point of view, income taxes might well be treated as a distribution of corporate income to members of society, the corporate beneficiaries, through the medium of governmental agencies. This necessarily assumes that the incidence of the corporation income tax falls upon the incorporated institution; that the tax is not shifted forward in the form of higher prices for the corporation's product or shifted backward in the form of lower prices for the factors of production. Otherwise, the corporation income tax is not an effective siphon of economic profits.

It would be difficult, however, to rationalize as distributions of corporate economic profits the other kinds of taxes which are imposed upon the corporation. Their payment is independent of the existence of such profits. Some taxes represent, in a sense, payments for services received by the corporation itself. For example, gasoline taxes are, in a general way, related to the use made of the system of highways. Property taxes, at least to some extent, defray the cost of fire protection, police protection, and general maintenance of the streets and sewers utilized by tax paying

[14] William A. Paton, *Essentials of Accounting* (Revised: New York: The Macmillan Company, 1949), p. 99.

corporations. Even if their incidence should be upon the corporation, payroll taxes are clearly a direct cost of the services of labor. And, it is generally acknowledged that, although paid by the corporation, commodity taxes are frequently shifted to customers and/or resource owners.[15]

It is noteworthy that the view that income taxes represent the distribution of income has been advocated by some on grounds which seem to be unrelated to any concept of the corporation. For instance, the following paragraph is found in Mason's and Davidson's *Fundamentals of Accounting:*

> To the stockholders income taxes are as much of an expense as property taxes, and it clearly is erroneous to use the net income before deducting income taxes as an indication of the benefit which stockholders receive from the operations of a corporation. At the same time, there is much to be said in support of the treatment of the provision for income taxes as a distribution rather than a determinant of net income. If there is no net income, there is no income tax. From the managerial viewpoint, the net income before deducting interest and income taxes is a more meaningful indication of the results of operations and one which can more effectively be compared from one period to another. We shall, therefore, treat income taxes as a share of the Federal and, in some cases, state governments in the net income of a corporation—an income distribution rather than an expense.[16]

The dependency of the existence and magnitude of income taxes upon the existence and magnitude of *taxable* income is, of course, inherent in the particular method used in measuring the amount of the tax. Certain bonus arrangements for management personnel are also frequently dependent upon the results of operations in much the same manner. The measurement of "wage payments" to employees in that fashion, however, has apparently not affected their acceptance as expenses. It is likewise true that if there is no real property, there is no real property tax, and the amount of real property tax depends directly on the amount of real property. A corporation which rents rather than owns real property pays no real property tax as such. Does that mean that should the corporation acquire real property, the property taxes imposed on the acquisition constitute a distribution of income rather than an expense?

As for the managerial viewpoint, there can be no doubt that tax planning represents an extremely significant factor in modern decision making on the part of corporation managers. This would seem to indicate that management's primary concern is the amount of profits *after* taxes rather than the amount before taxes.

The argument that "net income before deducting interest and income taxes is a more meaningful indication of the results of operations" for comparing "one period to another" is generally raised in favor of segregating revenues and expenses into operating and nonoperating classifications. Operating revenues are those revenues derived from the primary source of revenues (e.g., sales) and operating expenses are the costs identified with the attainment of those revenues. The difference between operating revenues and operating expenses constitutes operating profit (or loss). Operating profit, therefore, is not affected by the magnitude of nonrecurring gains and losses, incidental revenues and expenses, or the capital structure of the corporation.

Nonoperating items which must be deducted from revenues and gains in the measurement of corporation income are apt to be determined by the concept of income and the concept of the corporation.

[15] See O. H. Brownlee and Edward D. Allen, *Economics of Public Finance* (2d ed.; New York: Prentice-Hall, Inc., 1954), p. 286, and Harold M. Groves, *Financing Government* (4th ed.; New York: Henry Holt and Company, 1954), p. 136.

[16] Perry Mason and Sidney Davidson, *Fundamentals of Accounting* (3d ed.; Brooklyn: The Foundation Press, Inc., 1953), p. 168.

It is believed that the concept of income adopted for this comparative study of the effects of different concepts of the corporation on accounting is reasonably representative of the popular notion of business income. Other factors, such as the contingent nature of deductions and the comparability of the resultant incomes of different periods, are irrelevant.

DIVIDENDS

A "dividend" has been defined as "an appropriation of current or accumulated earnings with the intent to distribute an equivalent amount of enterprise assets among the stockholders of a particular class on a pro-rata basis."[17] In the very large majority of cases dividends are distributed in the form of cash but the possibility of distributions of other forms of assets does not alter the basic analysis of the dividend transaction.

From the point of view of those who look upon the corporation as an association of common shareholders, dividends to preferred shareholders represent an expense akin to interest charges. Such dividends represent payments for the use of the capital supplied by the original purchasers of preferred shares. The amount which could be distributed to common shareholders without impairing their cumulative investment is determined only after allowing for preferred dividends whether actually paid or, in the case of cumulative preferred stock, merely accrued. This treatment is manifested in the typical computation of a period's earnings per share of common stock or the computation of the book value of common shares. Husband reaches this conclusion as follows:

"The preferred stockholders occupy a 'hybrid' position, a resultant of the cross breeding of bonds and common stock. On the theory that the common stockholders occupy the entrepeneurship position in the corporation, preferred stock, like bonds, represents the hiring of capital service. Consistent therewith preferred stock dividends are best treated as a cost."[18]

Dividend payments made to common shareholders represent distributions of corporation income to the co-owners of the corporation. The amount which *could* be distributed to association members (common shareholders) as dividends without impairing their cumulative investment is the corporation's income. The difference between the amount of income and the amount which *is* distributed as dividends constitutes undistributed income which may be allowed to accumulate for use in the business.

The concept of the corporation as a social institution also requires the treatment of dividends on preferred stock as an expense. Such dividends represent payments for the use of the capital supplied to the corporation by the original purchasers of preferred shares. Accordingly, dividend payments to preferred shareholders are expenses to the incorporated social institution and, where cumulative, should be accrued in the accounting records in the absence of actual disbursement.

But dividends on common stock are also an expense to the incorporated social institution. The original purchasers of common shares supply capital to the corporation; dividends represent payments for its use. Bonds, preferred stock, and common stock all represent sources of corporate capital and, in general, the rates of return on these three types of investments may be expected to vary with the degree and nature of the risks involved.

On the other hand, from a strictly legal viewpoint, dividends on both preferred stock and common stock constitute a dis-

[17] W. A. Paton (ed.), *Accountants' Handbook* (3d ed.; New York: The Ronald Press Company, 1948), p. 1039. If this definition is accepted, the term "stock dividend" is a misnomer for no distribution of enterprise assets is involved.

[18] Husband, "The Entity Concept in Accounting," *loc. cit.*, p. 561.

tribution of corporation income. Preferred shareholders, as well as common shareholders, are considered corporation beneficiaries and the benefits of successful corporate operations are distributed to both groups in the form of dividends. In general, dividends are not deductible in the determination of taxable income[19] and it is clear in state corporation statutes that periodic corporate income ("net earnings") is to be measured before allowing for dividend payments to any class of stockholders.

The separate and distinct corporate entity existing and operating for the benefit of long-term equityholders likewise distributes the benefits accruing to preferred and common shareholders through the medium of dividend payments. Consistent with this view, interest payments to bondholders, dividend payments to preferred shareholders, and dividend payments to common shareholders must be looked upon as shares in the success of corporate operations rather than compensation paid by the corporation for the use of their capital.

CONCLUSIONS

On the basis of this examination it must be concluded that reliance on each of the four concepts of the corporation considered does produce significantly unique results. Specifically, the magnitude of the reported income of a corporation which has had interest, income tax, preferred dividend, and common dividend transactions during an accounting period varies with the concept of the corporation employed as the basis for analysis.

This examination also suggests that the rationalization of positions taken with respect to certain accounting problems—in some cases, problems about which there has been no general agreement—are necessarily related to underlying concepts of the corporation. For example, there seem to be mixed feelings with respect to the view promulgated by the Committee on Accounting Procedure of the American Institute of Accountants that income taxes are costs which require allocation in the course of the income determining process.[20]

A determination of periodic corporate income requires that expenses be deducted from the revenues to which they are related rather than from the revenues of the period in which cash payments happen to be made. An accounting for distributions of income, on the other hand, is not likely to be significant until such distributions have been appropriated. To view the corporation as an association of individual common shareholders, or to view the corporation as a separate and distinct entity existing and operating for the benefit of long-term equityholders, or to view the corporation merely as a particular set of legal relations, dictates that income taxes be treated as expenses. As expenses, the necessity of allocating income taxes to related revenues in the process of income determination is clear. Corporate income taxes may be treated as distributions of income only if the corporation is held to be a social institution and then only if it is accepted that the burden of the tax is not shifted to the corporation's suppliers and /or customers.

The treatment of dividends poses a similar problem. Consistent with the proprietary notion of the corporation and the social institution concept, preferred dividends are expenses and accordingly must be treated as deductions in the income de-

[19] There are some technical exceptions to this general rule. Public utilities are allowed a deduction for dividends (with limitations) paid on certain of their preferred stock (I.R.C., s. 247); banks and trust companies may deduct dividends paid on preferred stock owned by the United States or tax exempt United States instrumentalities (s. 583); and corporations classified as "personal holding companies" and "regulated investment companies" are permitted to deduct dividends in determining taxable income (s. 561 and s. 852).

[20] American Institute of Accountants, *op. cit.*, Chapter 10, Section B.

termining process whether or not formal appropriation has been made. Preferred dividends in arrears are distinct from accumulated undistributed *earnings*.

For the corporation viewed as a social institution, dividends on common stock likewise constitute expenses. Common dividends must accordingly be treated as deductions in the process of determining institutional income. It should be acknowledged, however, that measurement of the common dividends applicable to a given period's revenues may be difficult, if indeed feasible, in the absence of actual appropriation.

Other difficulties encountered in the analyses required by particular concepts were noted in the course of this examination. No concept should be summarily discarded, however, until a similar examination has been made of the effects of the concept of the corporation on the analyses of the many types of transactions involving the corporation's securities, a task beyond the scope of this article. It is hoped, however, that the systematic approach suggested here may prove useful in testing individually the acceptability of proposed "theories" which are dependent upon an underlying concept of the corporation and in testing the consistency of proposed accounting analyses.

STOCK DIVIDENDS AND THE ENTITY THEORY

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THE purpose of this paper is to examine the nature of the ordinary stock "dividend" (common shares issued to common stockholders) and to relate the accounting treatment of this type of transaction to the entity "theory" of corporate accounting.

ENTITY THEORY

Whether or not entity theory, proprietary theory, fund theory or some combination of theories provides the most useful and meaningful frame of reference for accounting practice is a fundamental issue which deserves discussion.[1] Such a discussion is beyond the boundaries of this paper. The issue is circumvented by the assumption that the entity theory is the most useful frame of reference for the following analysis. In support of this approach, current accounting practice may be cited. Today the entity concept is generally used in accounting for corporate transactions.

Chapter 7, Section B, Paragraph 6 of *Accounting Research Bulletin 43* summarizes the entity theory's approach to income determination with special emphasis on ordinary stock "dividends." It states:

> 6. In applying the principles of income determination to the account of the shareholder of a corporation, it is generally agreed that the problem of determining his income is distinct from the problem of income determination by the corporation itself. The income of the corporation is determined as that of a separate entity without regard to the equity of the respective shareholders in such income. Under conventional accounting concepts, the shareholder has no income solely as a result of the fact that the corporation has income; the increase in his equity through undistributed earnings is no more than potential income to him. It is true that income earned by the corporation may result in an enhancement in the market value of the shares, but until there is a distribution, division or severance of corporate assets, the shareholder has no income. If there is an increase in the market value of his holdings, such unrealized appreciation is not income. In the case of a stock dividend or split-up, there is no distribution, division or severance of corporate assets. Moreover, there is nothing resulting therefrom that the shareholder can realize upon without parting with some of his proportionate interest in the corporation.[2]

Thus the underlying concept is that the corporation is an entity separate from any of the parties at interest. Therefore the accounting processes revolve about the *corporation* and not the stockholders or creditors. Corporate accounting endeavors to convey a reasonably detailed, complete, clear story of the financial impact of transactions upon the *firm*, not upon the *individual* stockholders.

NATURE OF ORDINARY STOCK "DIVIDEND"

The ordinary stock "dividend" is a stock split-up which is accompanied by the "capitalization" of general surplus. The "dividend" consists of the pro-rata issuance of additional common shares to common stockholders without compensation to the corporation.

Split-up

A stock "dividend" has the effect of subdividing the outstanding shares so that, although there are more shares outstanding

[1] For an excellent summary see William J. Vatter, "Corporate Stock Equities" in Morton Backer (ed.), *Handbook of Modern Accounting Theory* (New York: Prentice-Hall, Inc., 1955), pp. 361–370. For a stimulating discussion of the entity concept and problems of its application see George R. Husband, "The Entity Concept in Accounting," ACCOUNTING REVIEW, October, 1954, pp. 552–563.

[2] American Institute of Accountants, *Accounting Research Bulletin No. 43* (New York: American Institute of Accountants, 1953), Chapter 7, Section B, "Stock Dividends and Stock Split-ups," p. 50.

after issuance of new shares, the relative ownership positions of the common stockholders are unchanged. Such an action may influence the market price of the shares, but from the entity theory viewpoint the stockholders have received their pro-rata share of the new issue and their relative claims against the corporation are unaltered.[3]

Capitalization of Surplus

In order to clarify the troublesome difficulties of terminology, the following schedule will illustrate the terms used in this analysis:

STOCKHOLDERS EQUITY

Common Stock, authorized, 1,000,000 shares, Issued, 500,000 shares, $5 par (stated or legal capital)	$2,500,000
Additional Contributions in Excess of Legal Requirements (Paid-in Surplus)	1,000,000
Total Contributed Capital	$3,500,000
Retained Earnings (Earned Surplus)	6,000,000
Total Stockholders Equity	$9,500,000

Note: "Paid-in" Surplus plus "Earned Surplus" equals "General Surplus" as the term is used in this discussion.

Under most state laws the issuance of additional shares of common stock will result in an increase in legal capital. That is, creditors are protected by the amount of the increase because an increased proportion of given total resources will not be available for distribution to owners as asset dividends.

Legal capital is an arbitrary amount which may not be reduced by cash or property dividends. In some states legal capital includes the paid-in surplus. In such cases the total legal capital would be equal to the contributed capital ($3,500,000 in the illustration).

If par or stated value per share remains unchanged following the stock "dividend," the *corporation* has an increased number of shares outstanding ***and an increased legal capital***. Since there is no change in total stockholder equity, it is necessary to transfer a part of general surplus to legal capital. The only reason for the transfer of surplus is to establish the necessary legal capital.[4]

Here, then, is the accounting essence of the ordinary stock "dividend." A record must be made of the subdivision of the shares outstanding and of the "capitalization" of surplus. Ownership interests stand as before except that a certain portion of the resources of the corporation has become unavailable for distribution to stockholders. The structure of the ownership claims has been changed because corporate action has resulted in additional legal capital. But no resources have been distributed. All that has happened is that some of the given resources have been *restricted* so that the board of directors will not be able to distribute legally to stockholders as much of the given resources as before. The amount of the restriction is the amount of the additional legal capital necessitated by the issuance of additional stock. Therefore, the portion of surplus to be capitalized is the amount of the additional legal capital.[5] Any other amount charged (i.e., Market, fair, total book value per share before issuance) is consequently arbitrary and cannot be logically related to the entity theory of corporate accounting, as described in paragraph 6 quoted above.

In summary, when the pro-rata issuance of additional shares has been completed,

[3] For expanded discussions see Thomas York, "Stock and Other Dividends As Income," ACCOUNTING REVIEW, September, 1940, pp. 380–393; and Nelson B. Seidman, "The Determination of Stockholder Income," ACCOUNTING REVIEW, January, 1956, pp. 64–70.

[4] Therefore, in instances of no-par stock "dividends," if there are no stated values and state laws permit, one accounting treatment would consist of memorandum recognition of the additional shares issued. Legal capital would be unchanged, if the board fails to assign an amount to each additional share issued. No formal entry is required because there has been no direct financial impact upon the firm.

On the other hand, in cases of no-par stock where the amount to be transferred to legal capital is determined solely by the board of directors, the amount that should be transferred would be the amount assigned by the board.

[5] Vatter, *op. cit.*, p. 392.

the owners are still in the same relative position as before. Their fractional ownership claim is unchanged. Therefore it seems that the *amount* to be transferred suggested above is the most straightforward alternative because such treatment records the stock "dividend" for what it is—no change in relative ownership claim (split-up) and further *restriction* upon the dividend-declaring powers of the board of directors in the actual amount restricted.

Type of Surplus to Be Charged

For reasons discussed in the previous section the *amount* capitalized (transferred to legal capital) should be no larger than the legal requirements. The question in accounting for stock "dividends" thus narrows down to what category of surplus should be charged for the amount capitalized. The categories of surplus most often available for capitalization are paid-in or donated or earned.

Basically, the only effect of a stock "dividend" is to *restrict* further asset dividend-paying possibilities because legal capital is increased and general surplus is decreased. *The substance of the transaction will have been properly reflected no matter what type of surplus is charged.*[6] Thus, where there is a choice between categories of surplus to be charged, it seems that a negative approach would be the most reasonable. That is, the type of surplus charged should be the one that under the circumstances least confuses the presentation of the stockholders' equity section of the balance sheet.

1. *Charge Paid-in Surplus?*

This "follow the line of least confusion" approach has the following implications. Where the laws specify such, or where retained earnings is the only available surplus account to be charged, retained earnings should be charged on the grounds that there is no alternative. But where there is an unhampered choice to be made, the writer believes that it would be better to charge paid-in surplus. The principal reason for advocating such treatment is that such a charge will lessen the confusing breach between contributed capital and legal capital.

Thomas York points out:

> As a matter of fact the expression "surplus capitalization" refers merely to the corporate act of increasing the amount of stated capital, with the consequent reduction of the balance of the net worth, commonly called surplus. . . . Surplus diminution resulting from an increase of stated capital is in quite a different category from surplus diminution resulting from a distribution of assets, and it therefore does not follow that both should receive the same accounting treatment.[7]

Raymond Marple observed:

> Since capital surplus represents an excess of contributed capital over legal capital, the declaration of stock dividends out of capital surplus has the effect of converting contributed capital into legal capital and of reducing the excess. Accordingly, there can seem to be no logical objection to dividends from this source.[8]

Legal capital originally arises from resources "paid-in" to the business and the amounts invested in excess of legal requirements are evidenced by paid-in surplus. Therefore, when legal capital must be increased without a corresponding increase in resources, it seems tenable that in substance some additional "paid-in" resources have become restricted—"legalized," as it were. Thus the gap between legal and contributed capital is properly constricted, and the "dividend" illusion is largely mitigated. In other words, this treatment seems to be the most logical be-

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[6] An exception would be the case where paid-in surplus is a part of legal capital.

[7] Thomas York, "Stock Dividends from the Viewpoint of Declaring Corporation," ACCOUNTING REVIEW, March, 1941, p. 17, p. 19.

[8] Raymond P. Marple, *Capital Surplus and Corporate Net Worth* (New York: Ronald Press, 1936), p. 165.

cause it most nearly reflects the financial impact of a stock "dividend" upon the *corporation* (the impact being added restriction of asset dividend-paying powers). Hence, where paid-in surplus or donated surplus exist, it appears reasonable that the effect of an ordinary stock "dividend" is that an additional portion of contributed capital has become a part of legal capital.

2. *Charge Retained Earnings?*

Stock "dividends" are most often recorded as if they constituted a capitalization of retained earnings. The ostensible reason for charging retained earnings is cited as follows:

> The principal legitimate reason for the formal capitalization of earnings is the desire of the management to reflect in the equity accounts the fact that income funds have been used—or are to be used—in financing expansion or in retiring obligations incurred in the development of the business, and to insure their permanent retention in the business.[9]

Such an approach to the recording of stock "dividends" has been challenged. For example, a criticism found in the *Accountants' Handbook* states:

> The practice of transferring earned surplus to stated capital through stock dividends impairs the integrity of the earned surplus account as a *measure of undistributed profits and also obscures the amount of capital originally committed to the enterprise.*[10]

Why are earnings retained, anyway? Does not the retained earnings account reflect the continued use of resources generated by profitable operations for the benefit of the enterprise? Certainly any stockholder who understands the rudiments of accounting and business administration knows that a large chunk of the resources acquired through profitable operations is permanently committed for legitimate corporate purposes and will never be distributed to the owners. Thus the "freezing" of retained earnings by formal capitalization has no mysterious power to alter a "fact."[11] The "fact" is that a large part of the retained earnings is frozen as soon as it accrues because of the essential nature of business operations. Consequently, in general the idea that the act of declaring a stock "dividend" "freezes" retained earnings which are not already "frozen" is meaningless. Therefore, it is difficult to comprehend the reasoning behind the stand that a charge should be made against retained earnings for a stock "dividend" because a part of the earnings has been frozen into the business. This is especially the case if the amount capitalized is greater than the amount dictated by legal requirements. In the latter case, the excess capitalization is not any more frozen than if it remained in the retained earnings account.

In light of the entity theory, it seems that the most imposing criticism that can arise against charging retained earnings in preference to charging paid-in surplus is that such a charge helps to continue the illusion that the stockholder is receiving a true dividend. By charging paid-in surplus when available the corporation can better reflect the distinction between asset dividends and stock "dividends." Charging retained earnings for these two types of transactions only tends to blur the distinction. An inference from A.R.B. 43 is that many stockholders feel that there is no or little distinction between the two types of "dividends." Certainly one can conclude that charging retained earnings instead of

[9] W. A. Paton, *Essentials of Accounting*, Revised Edition (New York: Macmillan Co., 1949), p. 704.

[10] W. A. Paton (ed.), *Accountants' Handbook* (New York: Ronald Press Co., 1943), p. 1016 (my italics).

Rufus Wixon, "The Nature of Corporate Capital," *The Journal of Accountancy*, September, 1946, pp. 214–220, favors showing the amounts capitalized via stock dividends as a separate item under the "accumulated capital" section: "The resulting increase in legal capital can be shown without obscuring the real amounts of contributed capital and accumulated capital by restricting the portion of capital accumulated from earnings represented by this increase in legal capital."

[11] York, *loc. cit.*, p. 17.

paid-in surplus is the more confusing treatment if the proper accounting objective should be to reflect a stock "dividend" for what it is—a stock split-up accompanied by a dictated increase in legal capital.

APPRAISAL OF CURRENT RECOMMENDATIONS

Chapter 7, Section B, of A.R.B. 43, makes several recommendations in regard to stock "dividends." It advocates charging earned surplus for any amounts capitalized. Doubts as to the desirability of such a recommendation have already been mentioned in this paper.

Paragraph 10 of the *Bulletin* appears to be the most unacceptable. Considering Paragraph 6 (quoted above) and the analysis already presented in this paper, Paragraph 10 has several shortcomings. It reads as follows:

> 10. As has been previously stated, a stock dividend does not, in fact, give rise to any change whatsoever in either the corporation's assets or its respective shareholders' proportionate interests therein. However, it cannot fail to be recognized that, merely as a consequence of the expressed purpose of the transaction and its characterization as a "dividend" in related notices to shareholders and the public at large, many recipients of stock dividends look upon them as distributions of corporate earnings and usually in an amount equivalent to the fair value of the additional shares received. Furthermore, it is to be presumed that such views of recipients are materially strengthened in those instances, which are by far the most numerous, where the issuances are so small in comparison with the shares previously outstanding that they do not have any apparent effect upon the share market price and, consequently, the market value of the shares previously held remains substantially unchanged. The committee therefore believes that where these circumstances exist the corporation should in the public interest account for the transaction by transferring from earned surplus to the category of permanent capitalization (represented by the capital stock and capital surplus accounts) an amount equal to the fair value of the additional shares issued. Unless this is done, the amount of earnings which the shareholder may believe to have been distributed to him will be left, except to the extent otherwise dictated by legal requirements, in earned surplus subject to possible further similar stock issuances or cash distributions.[12]

Paragraphs 6 and 7 particularly emphasize and reaffirm the separate entity concept of corporation accounting. Yet Paragraph 10 is inconsistent with the entity concept because the fair value of the shares (such a price, besides being fleeting, arbitrary and often volatile, is irrelevant from the entity theory viewpoint) is recommended as the basis for accounting for the transaction. Herein lies the major objection of this writer to the *Bulletin*.[13] To say in Paragraph 6 that there is no income earned by the *stockholder* unless there is a distribution, division, or severance of corporate *assets*, and then to treat the stock "dividend" in the accounts *as if it were* a dividend that results in income to the stockholder *because* he thinks (erroneously) that it is income,[14] is to perpetuate an error and to add to the Himalayan pile of confusion that accountants are trying to clarify. Rather than advance the misconceptions that stockholders have by recognizing the misinterpretations in the formal corporate records, it would be better to *attempt* to clarify the misconceptions by explaining what actually occurs when stock "dividends" are issued. This means *explaining* that the proportionate equities of the shareholders have not changed, that legal capital has increased, and that a larger part of retained earnings is reflected in permanently reinvested resources. To shuffle retained earnings beyond legal requirements no longer results in the reflec-

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[12] American Institute of Accountants, *op. cit.*, p. 51.

[13] Essentially this objection was raised by Messrs. Calkins and Mason in their assenting with qualification. See also Maurice Moonitz and Charles C. Staehling, *Accounting, an Analysis of its Problems*, Vol. II (Brooklyn: Foundation Press, 1952), pp. 143–144.

[14] For an opposing view see E. B. Wilcox, "Accounting for Stock Dividends: A Dissent from Current Recommended Practice," *Journal of Accountancy*, August, 1953, pp. 176–181.

tion of the transaction as it affects the corporation. Rather, it goes beyond the facts by arbitrarily juggling the retained earnings balance and adding to the confusion.

A wiser course would be to explain the nature of retained earnings (in classrooms, stockholder meetings, annual reports, "dividend" notices, and any other media) rather than to take a step which recognizes fleeting market influences and implies that the illusion of stock "dividends" being income is not an illusion at all.

A prominent security analyst has stated:

> It seems to me that we investment analysts are much better informed than accountants as to investors' views on such matters. My own experience with investors does not agree at all with the accountants' view of their attitude toward stock dividends. I believe investors generally regard stock dividends as what they are stated to be in another portion of Chapter 7, Section B, namely, that they only change "the evidence which represents that interest, the new shares and the original shares together representing the same proportional interests that the original shares represented before the issue of the new ones." Therefore, I think the accountants are in error in the only justification they give for the procedure they recommend.

ALTERNATIVE ARGUMENTS

1. *Business Intent*

The recommendations in A.R.B. 43 would probably be on firmer grounds if they revolved around the business *intent* (giving stockholders a substitute for cash dividends) underlying stock dividends.

Essentially, it is sometimes urged that the stock dividend procedure "is a condensation of two transactions, (1) a pro-rata distribution in cash and (2) a pro-rata reinvestment of cash by the recipient shareholders."[16]

In most cases the stock dividend device is closely linked to the inability to pay an adequate cash dividend. Causes of the latter include impending debt maturities, plant expansion plans, and several other legitimate business reasons. Furthermore, a stock dividend policy may arise from comparisons of relative advantages and costs of the stock dividend device versus paying cash dividends and acquiring additional funds in the capital markets.

To treat the stock dividend transaction "as if" it were the telescoping of two transactions involving forced reinvestment seems to be a sounder approach for the A.R.B. 43 recommendations than Paragraph 10. However, it must be remembered that such forced reinvestment reasoning (1) is still inconsistent with Paragraph 6 and (2) opens the door to some vexing practical problems. The latter problems include eventual income tax ramifications, a changing of conventional investment accounting for recipients of stock dividends for consistency's sake, and possible asset revaluations being justified on the basis of pseudo-transactions similar to the forced reinvestment notions with respect to stock dividends.

2. *Memorandum Entry Only*

Some accountants may suggest that the legalistic recommendations made earlier in this paper should be ignored altogether. That is, from an economic point of view, nothing has happened to the entity. No formal accounting entry whatsoever is needed. Only a memorandum entry for the additional shares issued is necessary. It is probable that most accountants would reject this argument because they find themselves unable to ignore the legalistic realities of stock "dividends."

SUMMARY AND CONCLUSION

Accounting for stock dividends should attempt to clarify the misconception that stock "dividends" are dividends. To accept the misconception by formalizing it in the records at the fair value of the new

[16] *Accountants' Handbook, op. cit.*, p. 1016.

stock is inconsistent with the entity theory of corporate accounting, as it is described in A.R.B. 43.

The purpose of this paper was to emphasize, as others have done, the internal inconsistency of Chapter 7, Section B, A.R.B. 43. First, the *Bulletin*'s final recommendations are difficult to reconcile with the earlier description of the entity concept. Second, if the Committee on Accounting Procedure feels its conclusions to be correct, it would seem that the Committee's accounting thinking should be directed toward more persuasive arguments than those outlined in Paragraph 10 quoted above. Finally, to insure consistency, any argument involving notions of business intent or forced reinvestment call for a searching revision of the entity theory itself.

Any treatment of the stock "dividend" should be consistent with some frame of reference which underlies accounting practice. In turn, this frame of reference should be related to other bodies of knowledge and practice such as law, economics, and finance so that the network of such knowledge is strengthened by compelling consistency and universal applicability. Obviously, the latter relationships are the ideal. But it is toward the ideal that accounting practice should be directed. Detours or steps backward that add to confusion, to misinterpretations, to erroneous thinking, and to inconsistencies are routes which should be avoided.

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For the information of teaching members of the American Accounting Association, the numbers of new Associate Memberships are reported by schools. These include all applications processed by our Secretary's Office during the period of August 27, 1956 through April 15, 1957.

Over 400 members

John Carroll University (402)

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City College of New York (111)
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University of California, Los Angeles (132)
University of Miami (184)
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McGill University (61)
Michigan State University (83)
New York University (95)
University of Colorado (56)
University of Detroit (70)
University of Illinois (59)
University of Michigan (51)
University of Tennessee (73)
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Laval University
University of Iowa
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Chico State College
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Howard University
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Indiana University
Northwestern University
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University of California
University of Missouri
University of Wisconsin
Western Reserve University
West Virginia University

20–30 members

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Duke University
Husson College
Northeastern University
Notre Dame University
Pace College
Pennsylvania State University
Roosevelt University
Sacramento State College
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University of Denver
University of Duluth
University of Idaho
University of Kansas City
University of Massachusetts
University of Minnesota
University of Nebraska
University of Oklahoma
University of Pennsylvania
University of Pittsburgh
University of South Dakota
University of Southern California
Wayne University
Wright Junior College

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Alfred State
Bradley University
Brigham Young University
Brooklyn College
Christian Brothers College
David Lipscomb College
Duff's Business College
Eastern Illinois State College
Eastern Michigan College
Florida State Teacher's College
Florida State University
Franklin and Marshall College
Gannon College
George Washington University
Gettysburg College
Goldey Beacon College
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Johns Hopkins University
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Long Beach State College
Los Angeles State College
Louisiana Polytechnic Institute
Loyola University
Macalester College
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North Texas State College
Portland State College
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Russell Sage
Rutgers University
St. John Fisher
St. Louis University
San Diego State College
San Francisco State College
San Jose State College
Southern Illinois University
Tennessee Polytechnic Institute
Texas Christian University
Texas Technological College
Tulane University
Union College
University of Alabama
University of Bridgeport
University of Cincinnati
University of Dayton
University of Florida
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University of Kansas
University of Kentucky
University of Mississippi
University of North Dakota
University of Omaha
University of Puerto Rico
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Boston University
Bucknell University
Central Missouri State College
Central State College
Chicago Teachers College
College of St. Joseph
College of Steubenville
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Cornell University
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Duquesne University
East Carolina College
Elon College
Fairmont State College
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Georgia State College
Golden Gate College
Harding College
Henry Ford Community College
Iowa State College
Jacksonville State College
Joliet Junior College
Kansas State College
Kansas State Teachers College
Kentucky Wesleyan College
Long Beach City College
Long Island University
Los Angeles Junior College
Louisiana State College
Marquette University
McNeese State College
Morton Junior College
Napa Junior College
Nebraska State Teachers College
Newberry College
Ohio University
Ohio Wesleyan University
Oklahoma A & M College
Oregon State College
Pan American College
Pennsylvania State College
Regis College
San Diego Junior College
Siena College
Southern Methodist University
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University of Chicago
University of Maryland
University of New Mexico
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University of Tulsa
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Bakersfield College
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Bob Jones University
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California College of Commerce
Canadian Institute of Chartered Accountants
Canal Zone Junior College
Canisius College
Catawba College
Central Michigan College
City College of San Francisco
Claremont Men's College
College of St. Thomas
Colorado A & M College
Colorado College
Coopers Institute of Business
Creighton University
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Detroit Institute of Technology
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East Washington College of Education
Elizabethtown College
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Evansville College
Far Eastern University
Fenn College
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Florence State Teacher's College
Florida Southern College
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Georgetown College
Graceland College
Gustavus Adolphus College
Hartford Institute of Accounting
Harvard Business School
Heald Business College
Heidelberg College
Hofstra College
Howard F. Greene School of Accounting
Idaho State College
Immaculate Conception Seminary
Indiana Central College
Ithaca College
Jersey City Junior College
John Brown University
Kansas City Junior College
Kent State University
Lake Forest College
Lamar State College of Technology
LaSalle College
Lehigh University
LeMoyne College
Los Angeles City College
Los Angeles Harbor Junior College
Louisiana State University
Madison College
Manhattan College
Mankato State Teacher's College
Marian University
Marietta College
Marshall College
Memphis College of Accounting
Memphis State College
Metropolitan Business College
Midwest Institute
Mississippi Southern College
Mississippi State College
Milwaukee Vocational and Adult Schools
Montana State College
Monterrey Tech.
Moravian College
Morningside College
Morse Junior College
Muhlenberg College
Multnomah Junior College
Murray State College
Northeastern Louisiana State
Northern Illinois State Teachers College
North Texas State College
Oakwood College
Odessa College
Oklahoma Baptist University
Oklahoma University
Pacific Southern College
Pennsylvania Military College
Pierce Junior College
Portland Extension Center
Providence College
Queen's University
Reid CPA Coaching
Rider College
Rockhurst College
St. Edwards University
St. John's University
St. Joseph's University
St. Mary's University
St. Michael's College
St. Norbert College
St. Thomas College
San Bernardino Valley College

San Jose Junior College
Santa Ana Junior College
Seton Hall University
Southeastern Louisiana College
Southeastern State College
Southern State College
Stephen F. Austin State Teachers College
Stetson University
Strayer College
Syracuse University
Tennessee Polytechnic Institute
Tennessee Wesleyan College
Texas A & I
Texas A & M
Texas Western College

Thornton Junior College
Tri-State College
University of Arkansas
University of Buffalo
University of Chattanooga
University of Connecticut
University of Maine
University of Nevada
University of Redlands
University of Rhode Island
University of Richmond
University of San Diego
University of Scranton
University of Utah
University of Virginia
University of Wyoming

Villa Madonna College
Vincennes University
Virginia Polytechnic Institute
Wake Forest College
Walla Walla College
Walton School of Commerce
Washington & Jefferson
Wayland College
Westminster College
West Texas State Teachers College
Whitewater State College
Willamette University
William & Mary College
William Jewell College
Wisconsin State College
Yale University

THIRD PARTY ACTIONS AGAINST ACCOUNTANTS[1]

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A topic which has of late been receiving attention from accountants is that of their legal responsibility, not only to clients but to third parties—the client's creditors and stockholders. The purpose of this article is to discuss some of the characteristics of reported third party actions against accountants. All these actions were brought at common law and were instituted by third parties seeking to recover in damages losses supposedly sustained as a result of a contended proper reliance upon the independent accountants' allegedly negligent or fraudulent misrepresentations.

It is not the purpose of this article to discuss the development of the common law principles governing third party actions against accountants, but a brief statement of these principles may facilitate an understanding of a portion of the material which follows. In general, the major principles are: (1) accountants may not be held liable to third parties for negligence, and (2) accountants may be held liable to third parties for fraud. The negligence here spoken of may be defined as the doing of that which would not have been done, or the failing to do that which would have been done, by a cautious, prudent accountant in the same or similar circumstances. In the doctrine which holds that accountants may be held liable to third parties for fraud, the intent to deceive, necessary to support an action in fraud, has usually been, in the cases reviewed, inferred from the accountants' grossly negligent conduct. The courts have used phrases such as "a refusal to see the obvious" and "with suspicions thus awakened, they (the accountants) closed their eyes and blindly gave assent" to describe grossly negligent conduct from which an intent to deceive may be inferred. A loose but perhaps practical interpretation for accountants of the existing common law principles is that accountants may not be held liable to third parties for negligence, but may be held liable for gross negligence, although the liability, if imposed, will technically be for fraud, or, as in one case, for malpractice.[2]

The above brief statement of legal principles is based upon relatively few cases.[3] However, the principles established and subsequently re-affirmed in these cases presumably will be followed in deciding future third party actions, if they occur. Knowledge of these principles would thus appear to be of increasing significance to accountants in view of the growing reliance which is being placed upon their opinions. A study of the decided cases will provide this necessary knowledge and, possibly, an

[1] This article is based upon a portion of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the University of Michigan.

[2] The statement of legal principles is based upon the nine following cases: *Landell* v. *Lybrand*, 264 Pa. 406, 107 A. 783, 8 A.L.R. 461 (1919); *Ultramares Corporation* v. *Touche*, 255 N. Y. 170, 174 N.E. 441 (1931); *Beardsley* v. *Ernst*, 47 Ohio App. 241, 191 N.E. 808 (1934); *O'Connor* v. *Ludlam*, (C.C.A. 2nd) 92 Fed. 2d. 50, 58 S. Ct. 364 (1937); *State Street Trust Company* v. *Ernst*, 251 App. Div. 581, 243 N. Y. Supp. 176 (1st Dept. 1937); reversed in 278 N. Y. 104, 15 N.E. 2d. 416 (1938); *Candler* v. *Crane, Christmas and Company*, 2 K.B. 164 (1951), All E.R. 426 (1951), T.L.R. 371 (1951); *Duro Sportswear Inc.* v. *Cogen*, reprinted in Saul Levy, *Accountants' Legal Responsibility* (New York: American Institute of Accountants, 1954), pp. 247–252; *C.I.T. Financial Corporation* v. *Patrick W. R. Glover et al*, (1955), information on this action supplied by counsel for the litigants. Since the completion of this study, a tenth action, *First National Bank and Trust Company of South Bend, South Bend, Indiana* v. *Francis Small et al.* has been tried in the Supreme Court of the State of New York before a judge and a jury and a verdict rendered for the third party. Because this action is based upon substantially the same grounds as the C.I.T. case, in which the final decision was for the accountants, the decision will probably be appealed.

[3] For a full reporting and discussion of the existing legal principles, see the above cited book by Levy.

additional benefit. Familiarity with the underlying circumstances which induced previous third party actions may make accountants more cognizant of potentially dangerous situations in their future engagements.

The Accountants' Errors

In the following discussion, third party allegations of error are presented. The lack of detailed information, especially jury findings of fact, makes it virtually impossible to distinguish in all cases between alleged and actual errors. However, in many cases the third parties' allegations find support in the evidence presented upon trial of the actions and in the judges' opinions upon appeal of the lower courts' decisions.

Basic to all of the third party actions was the allegation that the accountants had failed to disclose, or had inadequately disclosed, material facts. Such a finding could certainly have been anticipated. Third parties would have no grounds for an action if all material facts were adequately disclosed.

In some of the cases the accountants failed to discover the material facts; in others, they erred in their judgment regarding the materiality of the facts discovered or in the manner in which they attempted disclosure. Apparently in only one instance did the accountants fail to disclose material facts, known to them, relative to the valuation of collateral securing receivables, and in this instance the accountants' opinions specifically disclaimed responsibility for the valuation of the collateral.

The third parties' allegations of errors made by the accountants, upon which they based their contentions that the accountants' representations were false and misleading because of inadequate disclosure, are listed below in order of their prevalence.

1. Improper reliance upon others for pertinent information was alleged in five cases. For example, the accountants accepted without further verification the representations of a client's employee with respect to the client's possession of merchandise of sufficient value as security for apparently long over-due receivables. In some of the cases the seriousness of the error was magnified by the fact that there was information available in the client's records which should have aroused the accountants' suspicions and caused them to investigate further. Accepting the representations of others, especially those of persons associated with or employed by the client, under such circumstances evoked severe criticism from the presiding judges.

2. The accountants' use of allegedly equivocal language or poor terminology in their attempts to disclose material information was the partial cause of at least four of the third party actions instituted.

3. The alleged error of improper classification of accounts, for example, the showing of a loan, secured by inventory, to a private firm as a receivable from a governmental agency, was found in three cases. Closely coupled to this type of error in one of these three cases, was the improper valuation of receivables, which in turn resulted in a misstatement of income. More specifically, the misstatement of income was allegedly produced by the concealment of substantial losses in the receivables and by the accrual of revenue on apparently worthless receivables.

4. Other allegations of errors are (1) the failure to discover fictitious receivables, (2) the improper interpretation of documents, with the subsequent improper reporting or recording thereof, for example, showing unsecured notes as secured, (3) the failure of the financial statements to reveal the correct amount of liabilities, actual or contingent, and (4) the failure to disclose material amounts due from others

arising out of transactions not fully at arm's length, for example, loans to companies controlled by a brother of the client's president. Each of the above allegations was made in two, but not necessarily the same two, cases.

Further examples of alleged errors, each found in only one but not all in the same case, are: (1) the failure to investigate further the suspicious circumstances surrounding a rather substantial debit balance in an account payable, (2) the failure to make a more thorough and cautious investigation upon discovery of the simultaneous pledging of accounts receivables to two, three and four banks, (3) the failure to disclose that advances to certain customers were in excess of the customers' annual sales and the probable significance thereof, and (4) the failure to verify the actual ownership by the client of fixed assets purportedly possessed.

Certainly the most serious allegation of improper conduct on the part of the accountants found in any of the cases was the allegation that the accountants deliberately remained silent when they knew, beyond doubt, that management's representations in the financial statements were false. On behalf of the accountants, however, it should be pointed out that they apparently believed that they had disclaimed responsibility for the accounts containing the false representations, and evidently the jury concurred in this belief since it found that the accountants' audit reports were not false and misleading. But certainly an accountant should recognize that he is treading upon quicksand if he believes that a disclaimer will relieve him of the possible imposition of liability for failure to disclose his knowledge of the falsity of management's representations. The case in which this allegation was made is, in itself, ample proof of the complete necessity for Auditing Statement No. 23.

The most important conclusion that can be drawn relative to the accountants' conduct is that in every case on which a rather detailed report is available, their conduct would today be considered to be in violation of the accounting profession's generally accepted auditing standards. Furthermore, in some of the cases the accountants' conduct did not conform to the accounting profession's generally accepted auditing standards prevailing at the time of the examination of the client's financial statements.

The exoneration of the accountants in most of the nine cases studied cannot be raised as a point of objection to the conclusion that their conduct was in violation of the profession's generally accepted auditing standards. All that this proves is that their conduct was not, under existing legal principles, deemed to be so grossly negligent as to warrant inferring an intent to deceive.

One other point of interest should be noted. The records available do not indicate a single instance of attack upon the accountants for failure to possess adequate technical training and proficiency. However, the very existence of a number of actions against accountants demonstrates that partial adherence to the profession's standards is not sufficient to avoid being the respondent in a litigation.

Accounts Alleged or Found to Be in Error

Although information on some of the earlier cases is somewhat limited, it was found that the accountants' errors, alleged or actual, were most likely to be found in or associated with current asset accounts, especially receivables. This was true in what might be called the four leading cases, namely, the Ultramares, O'Connor, State Street Trust Company and C.I.T. cases. There are several reasons for this, the first of which was the nature of the client's business activities in each case as

will be discussed later. Secondly, an over-valuation of receivables becomes apparent much more quickly than an over-valuation of fixed assets which in turn means the loss of working capital and a possible impairment of the client's debt-paying ability.

In only one case did the main issue center around fixed assets, and in that case it was not the valuation of the fixed assets which was criticized so much as it was the accountants' failure to determine whether the client in fact possessed these assets. A number of reasons suggest that future third party actions against accountants are not likely to be based upon allegations of error in fixed asset accounts. First, a loss of fixed asset values does not mean that the client's debt-paying ability is directly affected. Secondly, no attempt ordinarily is made to express fixed asset valuations in terms of realizable values. Thirdly, proof of loss of fixed asset values does not quickly become readily apparent. And, fourthly, the initial valuation of fixed assets is frequently more a matter of judgment than in the case of current assets.

Whatever criticisms there were of the income statement and net worth accounts followed more or less as a natural result of an error in the asset or liability accounts. The relationship of these accounts is such that an error in the assets or liabilities would almost invariably result in a misstatement of income or retained earnings or both.

Allegations of error with respect to the client's liabilities were found in two cases. In one, the financial statements failed to report all of the current liabilities and in the other, contingent liabilities were not disclosed. The latter would appear to involve the greater probability of error due primarily to the difficulty of discovery. There is also the question of whether the contingent liabilities should be disclosed, that is, whether the amounts involved are material, which is a matter requiring the exercise of judgment on the part of the accountants.

Accounting Firm Characteristics

The cases reviewed indicate that no accounting firm or accountant is immune from possible attack by third parties. Actions were brought against members of large well-known accounting firms, as well as against accountants who may be called small practitioners. This fact should destroy any mistaken ideas which may exist that third party actions are solely a hazard faced by the large firms or that the large firms are so large and their practices so superior as to make them immune from attack.

Client Company Characteristics

The clients' principal business activities varied considerably in the cases reviewed. However, in three of what have been called the four leading cases, the clients were engaged in the financing of the business ventures of others. In the fourth leading case, the Ultramares case, the client's business, although not of a financing nature, was such that it required large amounts of borrowed money. Thus, in the four leading cases, all the clients had the common characteristic of a low equity ratio, which of course meant that only a relatively small proportion of the total assets employed in the business were supplied by equity capital. This, in turn, meant that each of the clients had large amounts of debt outstanding and thus possessed what is known as a high degree of financial risk.

The nature of the clients' business activities also explains partially why errors, actual or alleged, were most frequently found in the current asset accounts. Most of the assets of companies specializing in the short-term financing of others would naturally be current assets. The typical

circumstances in each of the four leading cases were that the current assets were over-valued and that such over-valuation became apparent through the non-collection of the current assets (receivables). The resulting loss impaired the debt-paying ability of the client and resulted in insolvency.

One of the most important features to be noted with respect to the client companies involved is that in six cases, the only ones on which rather complete information is available, the client companies were either "one-man" companies or were closely controlled by two or three persons. The third party alleged, as the courts pointed out, that a number of these companies were complete frauds. In one case the court pointed out that the persons in control were dishonest and were acting in collusion to defraud. When one person, or several acting in collusion, deliberately attempts to defraud others in transactions entered into by his company, the accountants' task is made immeasurably more difficult. In such circumstances it would seem imperative that the accountants expand the scope of their investigation to include as much verification from without as possible, in addition to being more cautious and suspicious when examining the client's records.

Third Party Characteristics

In the cases reviewed, a majority of the actions were instituted by individuals. However, in three of the four leading cases, the actions were brought by financial institutions. The growth of insurance companies and pension funds, the ever-increasing demand for capital by business, and other factors, suggest that in the future large amounts of corporate debt will be held by institutions of a financial type. This coupled with the fact that these institutions are more likely to require accountants' opinions before investing suggest that future third party actions against accountants, if any, are more likely to be instituted by financial-type institutions.

Some Final Conclusions

The standards required of accountants to avoid being held liable to third parties are, as indicated by the cases reviewed, definitely inferior to those imposed upon accountants by their profession. Consequently, adherence to the profession's standards should provide accountants with completely adequate defenses against third party actions. In fact such adherence should do that which is preferable—prevent the institution of the actions. It should be obvious that even though the accountants attacked receive a favorable verdict, the very fact that they are the respondents in a litigation causes them to suffer a loss. The preparation of a defense against a third party action is a costly proposition, not only in terms of immediate monetary outlays, but also in terms of time and effort which might have been expended profitably elsewhere. And further, the very allegation that accountants have made fraudulent misrepresentations brings about a loss of prestige, not only to the accountants attacked, but to the profession as a whole.

In addition to adhering to the profession's standards, accountants should strive to bring about clear-cut statements of principles, standards and procedures. In virtually all the cases there was conflicting expert testimony relative to the accounting or auditing principles, standards or procedures followed. To reduce the possibility of such conflicting testimony, accountants should strive to improve existing practices. In attempting to do this the most important goal to be kept in mind is that of enlightenment—the presentation of full and fair financial statements based upon a ra-

tional analysis of the underlying facts. Any time and effort spent in improving the profession's standards and principles can only be viewed as a profitable investment.

One final word of warning should be given. Accountants in general should recognize that even though members of the profession were exonerated for making a number of the errors stated above there still exists the possibility that liability may be imposed upon them in the future should they make similar errors. It is true that the legal principles established in the Ultramares cases, decided a quarter of a century ago, are still applied today. However, as is true in other areas of law, the very marked development of new standards and principles in the field of accounting may introduce into the common law the requirement of a higher standard of care from the accountants even though the same legal principles are applied. Conduct which in the past was described as being merely negligent, may in the future, in view of new developments, be considered to be grossly negligent with the result that liability will be imposed for fraud. Exoneration in the past should not be looked upon as a guarantee that similar misconduct in the future will also result in exoneration.

TEST-CHECKING AND THE POISSON DISTRIBUTION—A FURTHER COMMENT

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PROFESSOR TUMMINS in a recent article discussed the manner in which the Poisson distribution can be used by auditors as an aid in test checking.[1] After explaining how to read the table of the Poisson distribution, the author goes on to discuss the analysis of a random sample drawn from a lot under three sections:

1. Procedure for Rejection of Hypothesis,
2. Procedure for Acceptance of Hypothesis, and
3. Evaluation of Indefinite Sample Result.

Professor Tummins has performed a useful service in calling attention to the potential usefulness of the Poisson distribution for certain checking purposes. However, there are two comments that must be made of Tummins' approach. The first point is that Tummins seems to suggest that an acceptance sampling approach can be used in the actual auditing process. There are many problems raised by such a general approach to auditing, as has been amply demonstrated by R. J. Monteverde.[2] There are a number of reasons why it is more desirable to use a survey sampling approach to auditing.

Despite this criticism, it is true that there are areas in which the kind of approach that Tummins is suggesting can be useful. These areas might be broadly classified as those in which the auditor is attempting to check clerical accuracy prior to actually auditing the document for purposes of analyzing the internal control system of the organization. An obvious example is the test-check of the aging of accounts receivable done by the business' personnel. Another example might be the test-checking of inventory footings and extensions. The second comment, then, on the Tummins' paper is that the trial and error method that is suggested is much too awkward. By making use of the relationship between the Poisson distribution and the Chi-square distribution it is possible to derive the same results as Tummins does in much shorter time.[3] It is the second comment which is discussed in detail in this paper. The procedure that will be followed is to take each case presented by Tummins and show how the answer can be derived with greater ease by utilizing the Chi-square distribution.

First Case: "*Rejection of Hypothesis*"

The example used by Tummins is one in which the universe of 130,000 expenditures is being checked for proper authorization by examining a sample of 500. In this particular case, the auditor will accept the lot if it is 2 per cent or less in error. The sample of 500 contains 20 expenditures which do not have proper authorization. With the aid of a table of the Poisson distribution Tummins concludes that "The auditor has evidence to support an opinion that the degree of defectiveness is greater than 2 per cent. He cannot state how much greater, but he can state with a confidence limit of 99 per cent that the defectiveness is greater than 2 per cent. . . ."[4]

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[1] Marvin Tummins, "Test-Checking and the Poisson Distribution," ACCOUNTING REVIEW, October, 1954, pp. 605–613.

[2] R. J. Monteverde, "Some Notes of Reservation on the Use of Sampling Tables in Auditing," ACCOUNTING REVIEW, October, 1955, pp. 582–591.

[3] *Cf.* A. Hald, *Statistical Theory with Engineering Applications* (New York: John Wiley & Sons, Inc. 1952), pp. 722–724.

[4] *Op. cit.*, p. 607.

TABLE I

THE χ^2 DISTRIBUTION
Probability in Per Cent

$f \backslash P$	*0.5*	*99.0*	*99.5*
6	.676	16.8	18.5
7	.989	18.5	20.3
8	1.34	20.1	22.0
9	1.73	21.7	23.6
10	2.16	23.2	25.2
11	2.60	24.7	26.8
12	3.07	26.2	28.3
13	3.57	27.7	29.8
14	4.07	29.1	31.3
15	4.60	30.6	32.8
16	5.14	32.0	34.3
17	5.70	33.4	35.7
18	6.26	34.8	37.2
19	6.84	36.2	38.6
20	7.43	37.6	40.0
21	8.03	38.9	41.4
22	8.64	40.3	42.8
23	9.26	41.6	44.2
24	9.89	43.0	45.6
25	10.5	44.3	46.9
26	11.2	45.6	48.3
27	11.8	47.0	49.6
28	12.5	48.3	51.0
29	13.1	49.6	52.3
30	13.8	50.9	53.7
31	14.5	52.2	55.0
32	15.1	53.5	56.3
33	15.8	54.8	57.6
34	16.5	56.1	59.0
35	17.2	57.3	60.3
36	17.9	58.6	61.6
37	18.6	59.9	62.9
38	19.3	61.2	64.2
39	20.0	62.4	65.5
40	20.7	63.7	66.8
41	21.4	65.0	68.1
42	22.1	66.2	69.3

By use of the Chi-square distribution which is given in Table 1 it is possible to determine the upper 99 per cent confidence limit *exactly* in the following manner:

$$f=2(x+1)$$

$$f=2(20+1)=42$$

where "x" is the number of defectives found in the sample and "f" represents the degrees of freedom for the Chi-square distribution.

For a P of 99 per cent (i.e. the upper 99 per cent confidence limit) and an "f" of 42 the value of Chi-square can then be read from the table as 66.2. The following relation then holds

$$500P'=\frac{66.2}{2}$$

where P' is the upper 99% confidence limit

$$P'=6.62\%$$

This means, therefore, that 99 per cent of the time when a lot was actually 6.62 per cent defective a random sample of 500 would produce 20 or less defectives. The auditor would be taking the risk of being wrong 1 time in 100 if he concluded that the proportion of defectives was 6.62 per cent or less. If the auditor desired, as Tummins postulates, to have an upper 99 per cent confidence limit of 2 per cent then he would reject the lot.

However, it is a rare case when the auditor can set a limit this sharply. More generally the auditor is interested in estimating from his sample what the upper limit of the percentage of defectives could be. He can then make a decision to investigate further or not.

Second Case: *"Acceptance of Hypothesis"*

In the second case discussed it is assumed that the sample of 500 yields only 2 defectives. Tummins concludes after his analysis that "The auditor could state with a confidence of being correct 99 times out of 100 that the per cent of defectiveness is less than 2 per cent."[5] Actually, by using the approach followed in the previous case the auditor can make a stronger statement. The procedure is as follows:

$$f=2(2+1)=6$$

$$P=.99$$

$$\chi^2=16.8$$

$$500P'=\frac{16.8}{2}$$

$$P=1.68\%$$

Thus the auditor can say, with a risk of be-

[5] *Ibid.*

ing wrong 1 time in 100, that the proportion of defectives is 1.68 per cent or less.

Third Case: "*Evaluation of Indefinite Sample Result*"

In this case it is assumed that the sample of 500 yields 10 defectives and the auditor wants the upper and lower 99 per cent confidence limits. In other words, the auditor wants a range which will include the true proportion of defectives 99 per cent of the time. Tummins describes a series of 3 trials to reach the conclusion that the upper limit (a 99.4 per cent limit) is 4.2 per cent. However, the 99 per cent limit, as has been shown above, can be determined immediately and exactly by use of the Chi-square distribution.

$$f=2(10+1)=22$$

$$P=.995$$

$$\chi^2=42.8$$

$$500P'=\frac{42.8}{2}$$

$$P'=4.28\%$$

This figure differs slightly from the 4.2 per cent Tummins found from his trial and error method because the 4.2 per cent is the 99.4 per cent confidence limit.

Again using the trial and error approach the conclusion is reached by Tummens that the lower limit (actually a 99.2 per cent limit) is 0.8 per cent. The precise 99 per cent lower limit can be determined exactly as follows:

$$f=2(10)=20$$

$$P=.5\%$$

$$\chi^2=7.43$$

$$500P''=\frac{7.43}{2}$$

$$P''=0.743\%$$

where P'' equals the lower 99 per cent confidence limit

Thus the auditor can say with a risk of being wrong 1 time in 100 when such limits are computed that the true proportion of defectives is between .743 per cent and 4.28 per cent.

THE ACCOUNTING FOR TRADING STAMPS

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THE TRADING STAMP has hit the retail trades in this country with an impact almost unparalleled in business history. Nearly one out of every two American families is collecting these stamps, offered by retailers in return for purchases at their stores, to turn them in for merchandise, premiums, or even cash. In 1956, trading stamps were distributed by over 140,000 retailers throughout the country in conjunction with sales of over thirty billion dollars worth of goods and services.[1]

It is therefore surprising to note that, even though these stamps were first issued in 1891, and despite the recent phenomenal growth in their use, they are almost completely ignored in accounting literature. Not one of the standard textbooks, at the elementary, intermediate or advanced level, discusses the accounting for trading stamps, and the journals of the accounting profession have been almost as silent on the subject. Even a very thorough and complete work on retail merchandise accounting, published as late as 1956, makes only the most incidental reference to the stamps,[2] while the two major federal tax services, although devoting considerable space to "trading with the enemy," dismiss "trading stamps" with little more than a paragraph.

To discover any written clues to the theory and methods of accounting for the stamps, one must turn to the legal decisions which discuss these problems. While the trading stamp comes into legal prominence chiefly through attempts to prohibit it, burden with oppressive regulations, or license its use,[3] some of the strongest arguments advanced by those defending the stamp practise are grounded in accounting theory.

Before going into the accounting theory as gleaned from the legal decisions, however, a short explanation of the way stamps are used might be in order. Mechanically, the trading stamp plan usually works as follows: the trading stamp company enters into a license agreement with retailers authorizing them to use its system. The stamp company furnishes the licensee with its trading stamps to be distributed at the rate of one stamp for each ten cents paid in cash at the time of sale or to be paid in cash before the fifteenth of the next month after a retail purchase. The retail purchaser pastes the stamps in a book provided for the purpose by the stamp company, and when the book is filled with 1200 stamps, he takes it or mails it to a redemption station maintained by the stamp company and exchanges it for merchandise premiums or prizes.

Under most trading stamp plans, the stamps are sold by the stamp company to the retailer on a "non-redemption" basis. The licensee pays a flat fee for a quantity of stamps, to be issued to his customers, whether the latter ever redeem the stamps or not. The retailer is then out of the picture as far as those stamps are concerned. If his customer presents the stamps for redemption to the trading stamp company, he receives his prize. If the stamp is never redeemed, the stamp company is that much ahead. This feature, incidentally, is also a bone of legal contention, a few states

[1] Vredenburg, H. L., *Trading Stamps*, Indiana University Business Report No. 21, 1956, pp. 19–37.

[2] Bell, H. F., *Retail Merchandise Accounting*, 2nd Ed., New York: Ronald Press, 1956, p. 325.

[3] 52 *American Jurisprudence* 775. See also 24 *Tennessee Law Review* 557 (1956), and 41 *Iowa Law Review* 265 (1956).

attempting to collect for the unredeemed stamps on the theory that they are subject to the law of escheat.

Some stamp plans operate on a "redemption" basis. Here the retailer pays a smaller fixed fee to purchase a quantity of stamps, covering the cost of printing and other overhead charges of the stamp company. It then pays a further charge for those stamps, which after issue to its customers, are actually turned over by them to the stamp company for redemption for prizes. Under a few plans, the retailer gives out his own stamps and accepts them in payment for merchandise on sale at his store, or for cash.

Most of the cases in which the accounting aspects of stamps are discussed involve the question of whether the issuance of trading stamps has the effect of cutting fair trade prices in violation of a state Fair Trade Act,[4] or results (when articles are sold at cost and stamps given) in a sale below cost prohibited in a state Unfair Practices Act,[5] or in violation of a state Motor Fuels Act which does not permit sales of gasoline at retail at a price below that posted on the pump.[6] In each case, the defenders of trading stamps insist they are not a device for cutting prices, but rather represent a method of giving the familiar 2 per cent discount for cash purchases or payment made within a normal discount period. The arithmetic of this theory is that a filled stamp book represents $120.00 of purchases, and the book has a redemption value of about $2.50 in merchandise or cash, which is 2.08 per cent of $120.00.[7]

There are numerous decisions that agree with this contention, and specifically hold that the practice of merchants in issuing trading stamps with the purchase of articles is merely a method of discounting bills in consideration for the immediate payment of cash.[8] In doing so, they contrast the giving of stamps, which they categorize as a cash discount and not a deduction in the price of the articles sold, with trade discounts, rebates, and other allowances, which are usually treated as a direct deduction from the sales price of the items.[9] One judge even quotes from two accounting textbooks in making the distinction in his decision.[10]

In a more recent case, however, the judge took exactly the opposite tack, finding that trading stamps definitely include a trade discount as well as a discount for cash. He argued that trading stamps have no value unless and until one fills a whole book. The average customer of a supermarket purchases about $4 worth of goods at a time, and gets no cash discount for this alone. He earns his discount by visiting licensees of the particular trading stamp company enough more times to spend $120. This, the decision held, is a direct quantity discount, paid retroactively like a quota discount, even though it may be said that it includes a discount for cash. The judge insisted that trading stamps are more effective in increasing volume of sales than is an ordinary discount for cash, and believed that the extent that the stamps did increase sales measured the amount they exceeded a true discount for cash. Finally, to illustrate his point, he cited "double stamp days" as refuting the

[4] *Bristol-Myers Co. v. Lit Bros., Inc.*, 6 Atl. (2) 843 (Pa. 1939); *Weco Products Co. v. Mid-City Stores*, 131 Pac. (2) 856 (Calif. 1942); *Benjamin v. Palan Co.*, 92 N.Y.S. (2) 413 (1949).

[5] *Trade Comm. v. Bush*, 259 Pac. (2) 304 (Utah 1953); *Food Bureau v. Garfield*, 125 Pac. (2) 3 (Calif. 1942).

[6] *Sperry & Hutchinson Co. v. Margetts*, 104 Atl. (2) 310 (N. J. 1954).

[7] *Sperry & Hutchinson Co. v. Hoegh*, 65 NW (2) 410 (Iowa 1954).

[8] *Ex Parte Hutchinson*, 137 Fed. 949 (1904); *Sperry & Hutchinson Co. v. Siegel-Cooper Co.*, 225 Ill. App. 540 (1922); *Winston v. Beeson*, 47 SE 457 (N. C. 1904); *Sperry & Hutchinson Co. v. Hudson*, 226 Pac. (2) 501 (Ore. 1951); *Sperry & Hutchinson Co. v. McBride*, 30 NE (2) 269 (Mass. 1940).

[9] *Sperry & Hutchinson Co. v. Margetts*, *op. cit.*, p. 312.

[10] *Ibid.*, p. 312, quoting Rosenkampff & Wider, *Theory of Accounts*, pp. 478, 488, and Montgomery, *Auditing Theory & Practice*, pp. 499–500.

thesis that the stamps are cash discounts and not rebates or deductions from price.[11]

But, turning for a moment from accounting theory to actual practice, in the trial of one case, a certified public accountant of preeminent standing in the profession appeared as an expert witness for the trading stamp company. In his testimony, he indicated how trading stamps should be handled for accounting purposes by a retail gasoline dealer. He stated that when the dealer purchases the stamps, they should be entered on his books as an inventory or deferred charge, and considered as a deferred expense until he hands them out. When the gasoline sale is made, the dealer receives cash for the posted price and credits sales for that figure. He also hands out stamps, which causes him to reduce his inventory or deferred charge and set up an expense account. The expert testified that while that account could be given any number of appropriate titles, such as "trading stamps given," "customer relations expense" or "cash discount," the account represents a financial expense. He said that this cash discount had no effect upon the price of the gasoline, comparing it with interest collected on overdue accounts, which is credited as "other income" and constitutes another financial transaction but which does not change the price. Finally, he testified that such a cash discount does not amount to a deduction from price, but constitutes a payment for an accommodation.[12]

Thus, then, in the arguments for and against trading stamps presented in the lawsuits to determine whether they violate anti-price cutting laws, we see the theory and practice of accounting for the stamps as determined by the legal decisions on the subject. The defense essentially boils down to the argument that cash discounts in the form of trading stamps are given on an invoice total, not on the price of any item, and that accountants treat cash discounts as affecting financial expense and not as a reduction in price. Let us see how that squares with the theory and methods generally accepted today by the accounting profession.

In the first place, from the standpoint of accounting theory, even if one accepts the comparison of trading stamps to cash discounts in an effort to prove they do not amount to price reduction, it may indeed be a mistaken move in view of the modern concept, gaining acceptance among practicing accountants, which sees sales discount as a deduction from sales income rather than as an item of expense, and purchase discount as a deduction from cost of sales rather than as other income. Mason, Stenberg, and Niven, for instance, specifically assert that since sales discounts are, in fact, price adjustments; they consider them to be adjustments of the revenue from sales.[13] Finney & Miller also treat cash discounts as such deductions.[14]

Paton and Paton say that the offering of cash discounts is a widespread and commonplace feature of business procedure and taken for granted in any well-managed concern. They insist that the real price is of course the net cash price, and to treat purchase discounts as revenue is a clear violation of the doctrine that revenue is realized by the delivery of the completed product.[15] Lawrence and Ruswinckel not only are in agreement, but devote con-

[11] *Colgate-Palmolive Co. v. Dichter, Inc.*, 142 Fed. Sup. 545 (1956).

[12] Record of Trial of *Sperry & Hutchinson Co. v. Margetts*, in Superior Court, Chancery Division, Hunterdon County, N. J., May 21, 1953, pp. J204a–J253a.

[13] Mason, P., Stenberg, G. C. and Niven, W., *Elementary Accounting*, 2nd Ed., Brooklyn: Foundation Press, 1956, p. 176.

[14] Finney, H. A. and Miller, H. E., *Principles of Accounting, Introductory*, 4th Ed., New York: Prentice-Hall, 1953, pp. 89–90.

[15] Paton, W. A. and Paton, W. A., Jr., *Corporation Accounts and Statements*, New York: Macmillan, 1955, p. 302.

siderable space to refuting the argument that purchases should be entered at the gross figure, and cash discounts be considered income.[16] Neuner unequivocally says that in sound theory there is but one accurate method, that of deducting the amount of the cash discount from the invoice and entering the materials at net cost.[17] It would thus seem that, in the light of the above growing sentiment on the treatment of cash discounts as deductions from selling price in both accounting theory and practice, the defenders of the trading stamp had better seek another argument, than the questionable one of comparing them with cash discounts, in attempting to prove that their stamps are not price reductions.

Yet another discrepancy appears between actual accounting practice with reference to trading stamps and that indicated in the arguments and testimony in most legal cases, which, while of relatively minor importance, is actually a point in favor of the trading stamp. In his testimony referred to above, the accounting expert not only compared trading stamps with cash discounts, but said the distribution of the stamps represents a financial expense, the opposite of "other income." In practice, however, trading stamps are almost universally charged to some type of advertising or sales promotion account—a selling and operating expense. In justice to the expert, of course, it must be remembered he did suggest "customer relations expense" as one of the possible names for the account.

As was mentioned previously, the accounting literature is so devoid of any discussion on the handling of trading stamps that treating them as an advertising expense, rather than a financial expense, can best be attested to by observation of the methods employed by practicing accountants. One accounting manual used extensively in the retail trade, however, does specifically recommend they be charged to an expense center called "Total Advertising and Publicity."[18]

Proceeding from the arguments about the accounting for trading stamps to the actual entries made for them on the retailer-licensee's books, it appears that in practice these would vary somewhat in accordance with the stamp plan being used. Accounting for stamps sold on a "non-redemption" basis, where the stamps are sold outright to the retailers, is relatively simple. When the merchant buys the stamps, he charges them at their cost to him to a deferred expense account, such as "stamps inventory," crediting the trading stamp company as an account payable. An inventory of stamps on hand is taken at the close of the accounting period, and the cost of the stamps issued is then deducted by a credit from the inventory account and charged to "Trading Stamps Expense." The latter will appear on the profit and loss statement as an advertising expense. The remaining trading stamp inventory is treated as a current asset on the balance sheet, exactly in the nature of a supplies inventory, representing the cost to the merchant of the unissued stamps. Many small retailers charge the cost of the stamps directly to expense and ignore the amount on hand.

Accounting for trading stamps sold on a "redemption" basis is more complicated, since the contingent liability for stamps issued by the merchant but not yet redeemed is involved. At the time the retailer pays the comparatively small fee for the

[16] Lawrence, W. B., and Ruswinckel, J. W., *Cost Accounting*, 4th Ed., New York: Prentice-Hall. 1954, pp. 61-65.

[17] Neuner, J. J., *Cost Accounting*, 4th Ed., Homewood: Irwin, 1953, p. 159.

[18] Controller's Congress, *Expense Center Accounting Manual*, New York: National Retail Dry Goods Association, Expense Center 429.

stamp pads, he makes a similar entry to that in the system discussed above, as follows:

Trading Stamp Inventory
    Account Payable—Stamp Co.

As the stamps are issued and he receives an invoice from the stamp company for stamps redeemed at the agreed redemption charge per stamp, he enters:

Trading Stamp Expense
    Account Payable—Stamp Co.

At the end of his accounting period, the merchant takes a physical count of stamps on hand, and reduces his inventory account by the small cost price of the stamps thus shown to have been issued, with the entry:

Trading Stamp Expense
    Trading Stamp Inventory

Of the stamps issued, some have already been redeemed and charged for, others will be redeemed in the succeeding accounting periods, for which a contingent liability should be set up, and some will never be redeemed. Generally, the contingency is computed on an estimated basis, and an adjusting entry made to recognize the future liability of the merchant to the stamp company for the redemption charge of that percentage of the stamps issued, and not yet redeemed, that experience has shown will be redeemed in future periods:

Trading Stamps Expense
    Estimated Liability for Trading Stamp Redemption

It is in connection with the charge which creates this contingent liability that the only reference to trading stamps in the Internal Revenue Regulations refers,[19] in stating that the taxpayer distributing trading stamps is permitted to deduct from gross sales as a liability reserve, an accrued expense, the amount which experience shows will be required for the redemption of such part of the total stamps issued during the taxable year as will eventually be presented for redemption.[20]

This paper has attempted to shed some light on the theory and practice of the accounting for that phenomenon of modern American retailing, the trading stamp. It is hoped that the authors of future textbooks on accounting will recognize their importance and include an adequate discussion of trading stamps in their works. If this is done, the student will no longer be limited to the questionable treatment of the subject in the legal decisions to satisfy his accounting curiosity. Judges, too, will doubtless welcome the aid of professional literature in accounting to help them to decide future trading stamp cases which may depend for their solution on accounting theory.

[19] U. S. Internal Revenue Regulation 118, Sec. 39, 42-5.

[20] Mertens, *Law of Federal Income Taxation*, Chicago: Callaghan, 1955, Vol. 2, p. 1272.

UNBILLED REVENUES

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ONE of the first principles of income determination is the matching of revenues and costs which are applicable to a particular accounting period. The purpose of this paper is to discuss briefly the matter of unbilled revenues, one of the controversial problems that must be resolved in the accounting policy of a public utility.

Public service commissions generally permit an optional treatment of unbilled revenues, since under the uniform system of accounts they may be classified as accrued utility revenues or may be omitted from the records entirely. Moreover, if the utility accrues unbilled revenues, it shall likewise accrue unbilled expenses.

In the past most utility companies have not provided for unbilled revenues, because the variation in revenues from one year to the next did not justify the effort and expense required to make the necessary accruals and adjustments. However, during World War II a number of utility companies adopted the policy of bimonthly billing, principally to cope with the labor shortage existing at the time. This practice resulted in a substantial increase in unbilled revenues in the year in which the change was made. Approximately 30 days' service remained unbilled at the end of the year instead of the usual 15 days' unrecorded revenues. The Consolidated Edison Company of New York which adopted the bimonthly billing policy continues its previous practice and includes in income only those revenues based on meters read. The revenues thus recorded in the income account represent determined amounts received or due from customers. In order to make this practice clear to stockholders and the public, the Company in its annual reports has stated that the amount of utility service billed to customers lags behind the amount actually supplied and that at the year-end the amount unbilled is equivalent to approximately 30 days' service.

In 1951 the change in billing procedure from a monthly to a bimonthly basis was brought to the attention of the Collector of Internal Revenue. The Collector held that an accounting change had been made in those cases where an actual change in the billing procedure had taken place during the current tax year. The increase in the unbilled revenues resulting from the change of monthly to bimonthly billing must be accounted for as income in the current year and may be amortized over a ten-year period. On the other hand, recording unbilled revenues on the books where none had been recorded previously does not constitute an accounting change for tax purposes. Furthermore, if a utility did not account for 30-day accruals, there was no accounting change for tax purposes if it increased the accrual period to 60 days.

ACCRUING UNBILLED REVENUES

Some few utilities adopt the practice of accruing unbilled revenues and operating revenue deductions applicable thereto. The most significant item is federal income taxes. In addition there are costs of billing and collecting customers' accounts and revenue taxes which originate in a subsequent accounting period but must be applied to unbilled revenues arising in a prior period. The statement on the following page is an example.

The above statement shows that unbilled revenues applicable to the year 1956 amounted to $800,000 against which esti-

UNBILLED REVENUES FOR THE YEAR 1956
(000 omitted)

	As at December 31, 1956	*As at December 31, 1955*	*Applicable to Year 1956*
Unbilled Revenues			
Electric...........	$10,000	$ 9,400	$600
Gas...............	3,000	2,800	200
	$13,000	$12,200	$800
Operating Revenue Deductions			
Estimated expenses applicable to unbilled revenues...	$ 680	$ 640	$ 40
Revenue taxes.....	420	400	20
Federal income taxes	6,500	6,200	300
	$ 7,600	$ 7,240	$360
Unbilled revenues less applicable expenses and taxes.........	$ 5,400	$ 4,960	$440

mated accrued unbilled operating revenue deductions in the amount of $360,000 had been deducted, leaving a net increase in operating income of $440,000 for the year.

Unbilled revenues may be estimated by a statistical analysis of billings prepared progressively during the year, thus making it possible to ascertain the amount of unbilled revenues at any date during the year. Some utilities will not calculate their unbilled revenues until at the end of the fiscal period. Other utilities will accrue their billings by estimating unrecorded revenues on a 50 per cent basis—fifteen days for a monthly and thirty days for a bimonthly billing period—on the theory that half the meter readings have been completed at the end of the year. The load growth can be approximated by comparing the estimated accruals at the end of the current period with those of the previous year as illustrated above, especially where it is possible to measure the energy send-out.

PROBLEM OF CHANGE OVER

An accounting problem arises when a utility decides to change over from non-accruing to accruing unbilled revenues. If these accruals are to be brought into the accounting records, there is a question of how to classify these unrecorded revenues—whether to carry them to earned surplus or to some other special account. Before the accounting changeover, unrecorded revenues do not represent income of the current year, but consist of unbilled revenues for the previous year or years of the company's operation plus the accumulations arising from the load growth of the company. The net of unbilled revenues less operating revenue deductions at the beginning of the year should be credited to earned surplus and the net increase for the current year to current income and expense accounts.

Another possibility would be to set up a surplus reserve account for the net of unbilled revenues less operating revenue deductions as at the beginning of the year of change. The eventual disposition of this account would pose a problem, since it would never have ultimate realization as long as the company remained a going concern. Under such circumstances, it would be logical to conclude that accrued revenues might just as well be omitted from the accounting records as to incorporate this type of reserve account in the books.

EFFECT ON WORKING CAPITAL

Consideration must be given to the effect of recording unbilled revenues on the amount of working capital to be allowed by the regulatory commission as a part of the utility's rate base. According to the New York State Public Service Commission, working capital for this purpose is defined as "the capital reasonably and necessarily required to carry on such operations, over and above the utility plant. That comprises cash, materials and supplies, special deposits, prepayments, and amounts expended for services already ren-

dered but not yet reimbursed by customers." Here it should be pointed out that the definition of working capital used in the determination of a utility's rate base does not conform to the more generally accepted definition used in accounting and investment circles, namely, as the excess of current assets over current liabilities.

The recording of unbilled revenues in the accounts of a public utility will have no effect on the working capital requirement in so far as its rate base is concerned. The time lag representing the number of days' revenue from the date of rendering service until the date of collection is calculated for all operating and maintenance expense including taxes. The amount of working capital required is thus based on all those costs incurred, over and above the utility plant, between the dates of rendering the utility service and of collecting the cash therefor.

SUMMARY

Unbilled revenues may be accrued or not accrued according to the policy adopted by the utility. The recording of unbilled revenues—if not recorded beforehand—does not constitute an accounting change for income tax purposes; also, if unbilled revenues are included as a part of the accounting record they will have no effect on the working capital rate base.

The statement of assets and liabilities in a balance sheet does not purport to represent the financial position of the company upon a liquidated basis, but rather that of a going concern. The accounts of utilities are customarily maintained in accordance with generally accepted accounting principles, and one of these principles is that income is not taken into the accounts until realized. Most electric and gas utilities consider that point of realization of income as the date the bill is rendered to the customer.

"DEPRECIATION"—BETTER LEFT UNSAID

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Beyond anything else, successful communication of fact and opinion is an essential for accountants. Nor is it likely that the attention of the profession is properly focused when it tries to refine a technical terminology so as to make it understandable to the non-specialist. The layman requires, upon occasion, a personal interpretation of a special matter. The accountants and other specialists must be sure that their understanding of each other is such that all are able to give the layman his explanation. A recent study indicates that this understanding does not always exist.[1] As an example let us consider how the term "depreciation" is used by accountants.

In the above-mentioned study all issues of the Accounting Review, *Journal of Accountancy*, and *Bulletins of the National Association of Cost Accountants* from 1930 until October 15, 1954 were scrutinized for intended or implied definitions of many accounting terms, of which "depreciation" is one. Also examined were miscellaneous publications and all textbooks in accounting which were published currently on October 15, 1954. Therefore, the following report of the usage given "depreciation" is that of accountants whose work has been thought worthy of publication—and of these specialists only.

An example of each essentially different use of "depreciation" follows and—while each subsequent definition appeared less often than its immediate antecedent—all have been used several times.

1. "Depreciation is a term used to describe a systematic amortization of cost over useful life without regard to value during that life."[2]

2. "Depreciation, as used in accounting, means the exhaustion of service-units embodied in fixed assets."[3]

3. "*Depreciation* is generally defined as the loss in value of a fixed asset due to wear and tear, deterioration, and obsolescence."[4]

4. "The term 'depreciation' implies the physical deterioration and consequent loss in value that is constantly taking place in fixed tangible properties, due mainly to wear and tear, aging, action of the elements, etc., while the asset remains in use and produces income."[5]

5. "In their broadest significance, depreciation and depletion are means of reserving out of the earnings amounts sufficient to keep intact the capital invested in wasting property assets, so that, when it becomes necessary to replace the property in order to continue business, additional capital will not have to be invested for that purpose. This is subject, of course, to the fact that the cost of replacement may be more or less than the original cost. . . . In the present discussion the function of depreciation will be considered as it is ordinarily understood—that is, as the means of preserving the original capital, disregarding any difference there may be between the cost of the original capital assets and the cost to replace them."[6]

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[1] F. A. Singer, *A Summary and Evaluation of Selected Terms of Variable Usage in Financial Accounting*, unpublished doctoral dissertation, Indiana University (Bloomington, Ind., 1955).

[2] H. H. Wade, *Fundamentals of Accounting* (3d Ed., New York, John Wiley & Sons, Inc., 1951), p. 160.

[3] H. R. Hatfield, T. H. Sanders, and N. L. Burton, *Accounting Principles and Practices* (Boston, Ginn and Co., 1940), p. 304.

[4] John J. W. Neuner, *Cost Accounting, Principles and Practices*. (4th Ed., Homewood, Ill., Richard D. Irwin, Inc., 1952), p. 264.

[5] A. H. Rosenkampff and W. Wider, *Theory of Accounts* (Rev. Ed., New York, Ronald Press Co., 1942), p. 64.

[6] W. H. Bell, R. S. Johns, and T. V. Hogan, *Auditing* (3d Ed., New York, Prentice-Hall, Inc., 1952), p. 250.

Despite this variety of usages, the term was also used twenty-eight times without a suggestion of what should be understood. Is it not likely that there would be some misunderstanding among these writers? What is significant about these findings?

A variety of rather distinct ideas is offered in explanation of the term "depreciation." By no means all of them are capable of a useful and objective representation in the accounts. Certainly a popular definition of the term, typified by definition 4, does not speak of things which accountants can conceivably measure and report. A good deal of misunderstanding must result from the employment of a familiar term for a technical procedure. There is small correspondence between the familiar usage and the by-far-most-common accounting definition of "amortization of the cost of fixed assets." Nor do either of these agree with the "loss in value" idea of definition 3 unless, coincidentally, the cost and value are equal. While this was true, presumably, at the date of acquisition, it is most unlikely to remain consistently so throughout the life of an asset which, by definition, will last for several years. To speak of the "exhaustion of service-units," as does definition 2, suggests either the idea of diminishing future physical usefulness, or diminished value due to a decline in revenue potentially realizable. In neither of these cases is cost amortization implied. If, as definition 5 states, depreciation is a means of keeping intact the invested capital, a very important management responsibility has been attached to an accounting technique. Although the particular quoted material insists upon ignoring the difference between the cost of the fixed asset and the cost of replacing it, attaching such a responsibility to depreciation procedures makes the procedure liable for dealing with the fact that replacement cost may substantially exceed the recorded historical cost of the fixed asset. In considering the suitability of such a definition, it will be necessary to consider whether the recording of depreciation on fixed assets can possibly assure the maintenance of capital invested in those assets even where the cost to replace has not changed since the prior acquisition. It is clear that we have five distinct definitions. Having established this, let us consider the significant implications of each of them in turn.

Definition 1 emphasizes the cost of acquisition of fixed assets. Depreciation is closely related to this latter term, and by this definition there is an implication that fixed assets will always be stated at acquisition cost on the balance sheet. This is consistent with the generally accepted "cost basis" of accounting. The definition is significant for accounting in that it is easily possible to accomplish its objective by customary accounting techniques. Depreciation expense based on this definition will be represented on the income statement in dollars having a purchasing power often substantially different from the revenues with which this expense is there matched. The measure of this expense will be less current than that of most items on the income statement, and will in that sense be inconsistent with other income statement items, but the depreciation charge can be more consistently determined in accordance with this definition than with any other. In defending against the criticism of advocates of other definitions, this definition calls upon the admittedly unreal assumption that the dollar remains stable in value. It is therefore subject to all the criticisms that may be made of this assumption. "Going concern" theory is prominent in the defense of this point of view. Basically the argument is that the presumed continuity of operations of the firm makes the actual experience (acquisition cost) of the firm the measure of primary significance to that firm. Much

attention has been given to this problem by a committee of the American Institute of Accountants, and it supports this point of view.[7]

The accumulation of a credit in a valuation account to be shown on the balance sheet can be accomplished in a most consistent fashion under this definition. However, it must be conceded that more useful representations of fixed assets are readily conceivable. Book value, as usually determined, is intended as a point of departure in the determination of these more significant figures. Depreciation, as defined in this way, is subsidiary to the term "amortization," and this fact will be important to the recommendations which will later be made.

Depreciation, as a deduction for Federal Income Tax purposes, rests essentially upon Definition 1. However, two technical terms, "allowed depreciation" and "allowable depreciation," have been distinguished. The following quotation indicates their nature:

"Allowed depreciation means depreciation taken on a tax return which has been accepted by the Department, or the final allowance for depreciation if the Department has disputed the deduction. The allowable depreciation means the proper depreciation for each year, taking into consideration use, maintenance, repairs, replacement of parts, and all other relevant factors."[8]

The following quotation from *A Dictionary for Accountants* may be taken as an amplification of Definition 2.

"Depreciation basically is that part of the bundle of services believed at an earlier date to have been obtainable from a limited-life asset or, more commonly, a group of limited-life assets, and now found (a) consumed as originally estimated, (b) consumed, at a greater or less rate, from normal causes, (c) physically dissipated by accident or other unanticipated cause, (d) uneconomical when compared with the same or similar services available from other sources or (e) following changes in product, product demand, or operating methods, unsuited to the future needs of the owner. In this sense, the term does not involve dollar costs but simply has reference to the physical functioning, past, present, and future, of the limited-life asset to which it applies. A machine in use for some time is said to be partly depreciated; a machine worn out or for any other reason incapable of profitable use by its owner is said to be fully depreciated with respect to that owner, and hence ready for resale to a new owner who may have some residual use for it, or perhaps, ready for the junk heap."[9]

Definition 2 stresses "value,"[10] a balance sheet point of view, and seeks to provide a figure having more current significance for the balance sheet. There is raised the immediate question of how this more current figure is to be determined, and, strictly speaking, an appraisal seems to be called for. From such an annual appraisal, assuming it to be reliable, would come these desirable results. The balance sheet would present fixed assets at current market values, which information would be of special interest to stockholders and creditors, and the fixed assets would be expressed in dollars more nearly consistent with those which express the other asset values. Though the balance of the fixed asset account would be restated as frequently as is necessary, presumably the depreciation reserve would be accumulated according to some consistently applied basis of amortization. On the income statement the de-

[7] A Report of the Committee on Terminology of the American Institute of Accountants, *Accounting Research Bulletin*, No. 16 (New York, 1942) pp. 141–143.

[8] V. P. Ettinger, "Treasury Decision 4422," *N.A.C.A. Bulletin*, Vol. XVI, No. 5 (Nov. 1, 1934), p. 246.

[9] E. L. Kohler, *A Dictionary for Accountants* (New York, Prentice-Hall, Inc., 1952), pp. 145–146.

[10] Although "value" is not specifically mentioned in the definition, "exhaustion of service-units embodied in fixed assets" implies value in that the concern is with asset change—which must be measured by a valuation process. The implied procedure for determining each year's depreciation charge—purely theoretical, because impractical—is:

1. Determine the price at which the fixed asset could be purchased new as of the current balance sheet date.
2. Determine the total service life in the light of current knowledge.
3. Charge against revenue the portion of the current new value of the asset which this year's expired service bears to total service which the asset makes available.

preciation expense would be less consistent in amount than a charge related to cost, but the dollars which measure that charge would be more consistent in their significance with other dollar figures representing current revenues. The depreciation charge would have more current significance. This characteristic of depreciation on the income statement is true if we speak only of the amortization for the current year. However, with annual appraisals, there are likely to be other adjustments of net worth, either up or down, due to shifting asset values which, in the minds of some at least, ought to be represented as factors in income determination. This emphasis on value as of the balance sheet date would be inconsistent with going concern theory unless it was expected that no future changes in value would occur as the business continued to operate. This expectation, of course, is inconsistent with the notion that an annual appraisal is necessary. In any case, there are two drawbacks to annual appraisals. The first is the ever-present question of the reliability of the appraisal, and the second is the prohibitive cost of any appraisal which could make reasonable claim to reliability.

While Definition 3 speaks of "loss in value," the idea of "change in value" must be implied for value may move either up or down. When value is the total emphasis in the definition, one no longer relates depreciation to the particular use which the firm makes of the fixed asset being depreciated. It is this fact which distinguishes Definition 3 from Definition 2. In this case, "depreciation" may become "appreciation," which plus factor would command an equal right of representation on the income statement. This, for fixed assets, is a complete departure from going concern theory. In other respects the comments on Definition 2 would apply to this definition as well.

The "physical deterioration" of Definition 4 has, of itself, no accounting significance. Essentially, it is the familiar, non-accounting meaning of the term and is something which cannot well be measured and expressed in accounting reports and records. Furthermore, there are other factors, notably "obsolescence," which are considered in the calculation of accountants' "depreciation" whether it be considered cost amortization or value change. It is very doubtful that any accountant would agree that his charge for depreciation expense is representative of "physical deterioration" and only that.

If depreciation is regarded as a means of keeping intact the capital invested in fixed assets, as Definition 5 suggests, it may mean either of two things. It may mean that an effort is being made to remain in a position to replace existing fixed assets with others which will cost the same number of dollars as did those which are now held. Or alternatively, it may mean that an effort is being made to be able to replace the existing fixed assets with others which can make the same contribution to the net income of the business. The first of these possibilities is an unworthy objective. The second is an objective which may be possible of attainment (if the price level has fallen substantially) or an objective which is inadequate (if the price level has risen substantially). In either case it should be apparent that no plan of recording and reporting accounting data can accomplish the maintenance of capital investment, however defined. The maintenance of investment depends upon the acquisition of other assets to replace those which are used up in business operations. If the business has income, it must be a management responsibility to see that an appropriate amount of assets are retained. This appropriate amount may be either more or less than the existing amount; and, in any case, something less automatic and inflexible than depreciation accounting

ought to be relied upon. Aside from this major defect in the definition it may be noted that, while value is involved, the implied time for valuation is the replacement date. This contrasts with other definitions in value terms which are concerned with values as of the reporting date.

Despite the several definitions it is clear that what accountants label as depreciation in their reports is, nearly always, the result of amortizing acquisition costs. This definition is not difficult to understand, but its variance from the familiar definition and the fact that other definitions are advocated creates misunderstanding. This misunderstanding could be eliminated if it were made very clear that *depreciation is amortization*. However, since "depreciation" is a special case of "amortization," there is an obvious simplification. It is that the term "depreciation" be dropped from accounting terminology and that "amortization" be employed in all circumstances to which it properly applies. This substitution of a less confused, better understood term should have a very salutory effect.

But before asserting that this change is all that is needed one must ask about the status of "amortization." When that term was studied in the same manner as "depreciation," the following variations were found:

1. "The gradual extinguishment of any amount over a period of time, as the retirement of a debt by serial payments to the creditor or into a sinking fund; the periodic write-down of an unexpired insurance premium or of a bond premium."[11]

2. "In the discussion to this point, we have used the term 'amortization' to describe the processes by which the recorded valuations of assets may be allocated equitably and rationally to operations over the periods in which the assets make useful economic contributions to the enterprise. This word has been used because we believe it to be more descriptive of the broad concept involved than any of the more specialized terms which have found their way into the accountant's language.

"In the most specialized sense, asset amortization is described as *depletion* when applied to the exhaustion of natural resources—such as mines and oil wells—and as *depreciation* where physical plant (buildings, machinery, and equipment) is involved."[12]

3. "Amortization may be defined as a system of accounting which aims to distribute the cost or other basic value of intangible capital assets over the estimated useful life in a systematic and rational manner. The term amortization is used in connection with improvements to leased property and to intangibles, including goodwill, patents, trademarks, etc."[13]

4. "Congress and the Treasury Department have used the term amortization to designate the extraordinary depreciation of 'war facilities,' a temporary situation. The cost of construction or acquisition of certain fixed assets of land, buildings, and machinery which are deemed necessary as an aid in production for national defense may be charged off over a sixty months' period. The necessary formalities must be complied with and certain certificates obtained from the War or Navy Departments. The expression is also sometimes applied to the extinguishment of value in the case of an entire plant not subject, as a practical matter, to replacement."[14]

5. "The majority of writers in accountancy prefer to use the term 'amortization' to cover the write-off of both premium and discount on bonds; however, it is felt that

[11] E. L. Kohler, *A Dictionary for Accountants* (New York, Prentice-Hall, Inc., 1952), p. 26.

[12] R. H. Robnett, T. M. Hill, and J. A. Beckett, *Accounting—A Management Approach* (Chicago, Richard D. Irwin, Inc., 1951), p. 345.

[13] J. L. Dohr and H. A. Inghram, *Cost Accounting Principles and Practice* (3d. Ed., New York, The Ronald Press Co., 1946), p. 400.

[14] T. Lang, Editor, *The Cost Accountants' Handbook* (New York, The Ronald Press Co., 1948), p. 1194.

a distinction should be made when these principles are applied to the records of the investor. The existence of a premium means that the Investment account balance must be periodically reduced as the maturity date of the bonds is approached. The process by which this reduction is effected is described as 'amortization.' Where the bonds are acquired at a discount, the Investment account balance is below the maturity value of the bonds and this balance must thereafter be periodically increased as the maturity date is approached. This process is known as 'accumulation.'"[15]

The term "amortization" is very frequently found in accounting literature, but is defined with relative infrequency except that the verb "amortize" is often followed by the parenthetical phrase "write-off." Since this amplification is used in a specific situation, it is not possible to tell whether there are limits to the application of the term. The first of the above definitions is comprehensive. The remaining definitions place limits on the applicability of the term which either fail to recognize some of the uses of the term or reserve an area of meaning exclusively for more specific terms such as "depreciation," "depletion," "obsolescence," and "accumulation." Definition 2 restricts the usage to matters related to asset accounts, and thereby fails to recognize such things as the amortization of premiums and discounts on bonds. Definition 3 limits the use of the term to the write-off of intangible assets. The implication here is that "depreciation" is not "amortization." Definition 4 is very specialized and is more often called "accelerated depreciation." This idea is of significance principally because of its tax effect, and is related to taxable income rather than to income as determined by conventional accounting. The significant features of this special situation are arbitrariness and speed, so that clarity demands the use of an adjective such as "accelerated" with whatever designation is adopted for this situation. Quotation 5 offers a refinement of the term based on a nice distinction, easily recognizable but of doubtful necessity or usefulness. If there is any noticeable tendency in the literature, it is toward the adoption of the most general definition of the term.

There is need for clarification of "amortization" even if it were not the vehicle for simplification elsewhere. This term is important because it stands for one of the important mechanisms by means of which the accountant achieves a proper matching of cost with revenue of the same accounting period. This matching, of course, is one of the primary concerns of good accounting. Since, so very often, it is cost which is being amortized, the term tends to imply accounting on the "cost basis." Departure from a cost basis of accounting usually involves the abandonment of a single, unchanging base for the calculation of the amount to be amortized periodically. The term would be much less appropriate if the alternatives which have been suggested to the cost basis of accounting were adopted. On the other hand, this term more clearly expresses the significance of results and practices which are features of current accounting practice than does any of the more specialized terms which are used with greater frequency. Much criticism of accounting as presently carried on arises from an attempt to make accounting produce figures which are more appropriate to the ordinary (non-accounting) definitions of terms used, alternatively, to describe the results of what is essentially amortization. These facts lead to a recommendation.

It should be possible to eliminate some confusion if a broad definition, as in 1, were

[15] E. I. Fjeld and L. W. Sherritt, *Intermediate Accounting* (New York, The Ronald Press Co., 1942), p. 227.

generally adopted. The definition might be restated in this way:

> **Amortization is the accounting practice of assigning to or reassigning among the accounts, in a systematic way over several fiscal periods, an amount related to a fixed base.**

If this is our meaning for "amortization," it has a broad application in accounting. An understanding of its many applications leads to a comprehension of the essential similarity of many technical treatments of different accounts. It includes that which accountants do when they say they "depreciate," and it does not mislead. Is it not better to use only "amortization" (well defined, as above) in every situation, including fixed asset write-offs, to which it properly applies?

THE COST OF HUMAN DEPRECIATION—OSTRICH LIABILITY?

CORNELIUS KURTZ

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DESPITE OUR INDIVIDUALISM, there is a social minimum in the United States. It is a minimum living standard below which we would not consciously allow anyone to go. But far more than barely exceeding a minimum social responsibility and merely preserving the weak, enlightened self-interest brings about a positive approach: First of all, it is proposed that preventive measures are more economical than relief of human wreckage, and secondly, that industry must recognize its responsibility in bearing the burden of all the costs of productive enterprise.[1] The alternative is government assumption of this responsibility.

As the economic cost of production must include depreciation of plant and equipment, so must it include depreciation of labor or human effort. It is with inexorable human depreciation which results from oncoming old age, that this article is mainly concerned. The cost of retirement cannot be avoided by the failure of industry to absorb all of its share in current operations. For then the cost may simply be shifted to the community in general and will return in substantial measure to the producing entities. In this roundabout process, the aggregate cost could exceed that which direct absorption might entail because of its inefficiency as a procedure and because of its distorting impact on pricing.

My first premise, therefore, is that the cost of retirement resulting from human depreciation is part of the economic cost of production.

Secondly, it is suggested that the most effective, economical method of providing for the retirement of workers in our industrial economy is to have adequate "providing for one's own" by individual companies supplementing the minimum provisions of social security.

A third point follows that the absence of present plans to provide formally for retirement income for employees does not preclude the existence of a very real pension obligation.

Financial accounting, following its rules for objectivity, may forestall the charging of retained earnings and the recognizing of liabilities for past service pensions in the absence of a formalized pension contract. But since the trend toward establishing retirement plans in corporate enterprises is gathering momentum,[2] it is an "ostrich policy" when managements ignore pension planning. The strong probability that they will have to face the issue sooner or later gives the cost of retirement reality in the present as an unavoidable cost.

The positive approach

American businessmen are beginning to realize that providing for the retirement of workers is more than a policy of meeting an unavoidable social obligation. They are finding that meeting this obligation head-on brings productive returns to an enterprise in addition to serving the workers' welfare. In balance, there is thought to be

[1] Cf. J. M. Clark, *Social Control of Business* (New York: McGraw-Hill Book Company, Inc., 1939), p. 155f; and see "The Social Control of Corporate Giants," in H. Maurer, *Great Enterprise* (New York: The Macmillan Company, 1955), pp. 263–273.

[2] Number of pension, profit-sharing and stock bonus plans in effect (to nearest hundreds) based on Internal Revenue Service figures:

1930... 100	1947...10,400	1952...17,000
1939... 700	1948...11,300	1953...20,700
1942...1,900	1949...12,200	1954...26,600
1944...7,800	1950...12,900	1956...30,000+estd.

a net gain to the enterprise. This is the dynamic of retirement planning from the standpoint of the firm.

Arguments for adopting pension plans often include the following:[3]

a. Rewards faithful service; creates better employee relations.
b. Creates "room at the top."
c. Meets competition in attracting and retaining personnel.
d. Provides an orderly method of separating superannuated employees.
e. Results in more realistic costing of employee services, and takes advantage of current tax allowances.
f. Results in recognition of more realistic financial position.
g. Contributes in general to good public relations.

While all of the benefits and sacrifices of the "net gain to the enterprise" cannot be measured, continuing improvement in the longevity of Americans, the tendency of companies to have greater real earnings than financial conservatism permits in the original estimates, and continuing advances in production efficiency[4] may be regarded as positive supporting factors. The direct approach to the cost-of-retirement question, then, is through the belief that pension plans are advantageous to the firm per se.

Financing methods

For the going concern, there are two basic methods of financing the cost of retirement. In either case, if past service obligations are assumed, their impact reaches back to past earnings, for the production of the future will have to cover a cost that implicitly can be regarded as a charge against past production. Thus the legacy of existing facilities is surcharged by this cost just as a householder's budget must suffer a forgotten milk or electric bill.

The two principal methods of financing pensions are:

a. Deferred pay-as-you-go.
b. Funded, or actuarial-reserve.

The deferred ***pay-as-you-go method*** may be feasible for public plans backed up by the virtually unlimited taxing authority of the state. But it has only the attractions of simplicity, postponing the issue, and moderate initial cost[5] as far as corporate plans go. Under this arrangement, no fund is accumulated during an employee's working years. Instead, his superannuation is paid from income of the firm earned currently during the retirement period. This method might be called "Robbing Peter, Jr. to pay Peter, Sr." Despite offsetting effects, it is distorting to periodic income determinations with its one-generation lag in "cost incurrence." Intrinsic financial condition in a broader economic sense is not fully disclosed either, since the growing obligation to make superannuation payments is not reflected.

The ***actuarial-reserve method***, on the other hand, is both realistic and prudent. The incremental liabilites for future pensions are met periodically, and short-period operating figures include the reflected costs. "Peter, Sr." provides for his own retirement so that "Peter, Jr." won't have the possible double burden of providing for himself and his father, too.

Pensions that are funded can be planned with considerable short-run accuracy for large concerns. But even though mortality figures are based on statistical analysis of large numbers, the small concern can transfer the risk of adverse mortality ex-

[3] Cf. *Private Pension Funds* (New York, Merrill, Lynch, Pierce, Fenner & Beane, 1954), pp. 4–6; and *Management Faces the Pension Problem*, (New York: National Association of Manufacturers, 1950), pp. 8–9.

[4] V. H. Stempf, "Pension Plans," *N.A.C.A. Bulletin*, January 1943, p. 525.

[5] R. E. Wilson, "Three Decades of Experience With Stock Purchase Plans," *The Exchange*, October 1955, pp. 2–3: "The directors were disturbed when an actuarial study showed the large prospective liabilities under the plan which had not seemed burdensome on a current payment basis."

perience to an insurance company. However, all current revisions of mortality tables seem to indicate that our life-expectancies are better than ever. Thus projected retirement years are growing and the total costs of retirement actually are increasing.

Another problem is the question of forecasting prospective ratios of personnel turnover. Superannuation policies, whether formal or informal, apparently induce employees to stay with their companies—particularly where an employee forfeits all or a part of his equity in a pension fund if he leaves his company, and this raises the question of the extent to which the turnover of employees will diminish in the future if a pension policy is established.

Economically speaking, pension funds should be invested where returns and security of principal are maximized. Although this might be achieved by investing in a firm's own common stock, practical integrity of the funds is generally thought to be obtained by diversified investment elsewhere or through insurance. In addition, consideration of long-range inflationary impacts[6] cannot be neglected in pension-fund analysis.

The foregoing are only some of the questions that arise in defining the pension problem and setting plans for administering the costs of retirement. For pension-plan management, practical answers to questions of handling the imponderables and uncertainties are found in continuing conservative revisions in the light of changes that take place.

Without discounting the importance of these factors, this discussion must be limited to the major questions. This leads to the premise that the absence of present plans to provide formally for retirement income for employees does not preclude, economically speaking, the existence of a real pension obligation.

Financial statement impact

From the standpoint of ***management planning***, the financial statements of a concern ought to reflect impending past-service pension obligations even when they have not been undertaken formally. This is simply to say that the statements which are correct for taxation and certain other special purposes are not necessarily meaningful in every management interpretation.

Take KP Corp., for example. This company's statements of financial position and earnings for a particular year appear in condensed form, as follows:

Position

Net assets	$225,000
Capital stock	$100,000
Retained earnings	125,000
	$225,000

Earnings

Sales revenue, etc.	$675,000
Total costs, except taxes	590,000
Net income before taxes	$ 85,000
Income taxes	42,500
Net income	$ 42,500
Retained earnings:	
Beginning of period	82,500
End of period	$125,000

An actuarial study shows that if KP Corp. were to adopt a given pension plan at present, the estimated accumulated past-service liability would be $150,000, and the estimated current cost would be $10,000. This information substantially changes the figures for managerial plan-

[6] Cf. C. E. Haines, "Pension and Profit-Sharing Fund Investing," *Trusts and Estates Magazine*, December 1955.

ning. The presentations then might appear as follows:

Position	
Net assets	$230,000
Estimated past-service pension liability	$150,000
Capital stock	100,000
Deficit	*20,000*
	$230,000

The authenticity of the second set of figures hinges on the reality of the pension obligation. (Implicit tax benefits are figured roughly at a 50 per cent rate for the current pension provision only. Additional tax benefits would depend on the extent to which actual allowable payments of past-service benefits were made if a pension plan were adopted.) If pensions are regarded as an actual, impending social obligation, although not formalized by contract, then dividends currently paid to stockholders may be thought to be subtracted from funds that in part might have been reserved for employees' retirement. If most competitors or other firms in the local market have plans, the implications become clearer.

The fact that generally accepted accounting procedure would call for the recording of legally-established pension obligations only, has been brought out here already. But assuming that when the obligation to provide for workers' retirement is real, it can be reflected in financial estimates *for management use* (even though not shown in "objectively" prepared statements that require contractual arrangements as support for obligations). Following this socio-economic approach, there are two technical problems that deserve consideration:

a. How to estimate a firm's intrinsic pension liability.

b. How to reflect this liability in financial statements.

Earnings	
Sales revenue, etc.	$675,000
Total costs as previously shown	590,000
Current proforma provision for pension costs	10,000
Income taxes	37,500
Net income	$ 37,500
Deficit:	
Beginning of period ($82,500–$140,000)	*57,500*
End of period	*$ 20,000*

Estimating the intrinsic liability

A limiting factor in calculating a firm's liability for the present costs of worker retirement is the uncertainty of applying mortality figures which are based on a large number of lives. Also in computing the theoretical present obligation for a particular concern, it is dangerous to assume a rule-of-thumb average age of workers. But for the purpose of management appraisal and interpretation, the potential pension liability, in the absence of a formal funded pension plan, can be computed with reasonable accuracy by using the following method:

For the sake of brevity, a detailed discussion of the computation is not attempted here. It is hoped that the figures shown are self-explanatory. Accordingly the following simple assumptions are made:

a. Each employee will receive a $1,500 annual pension.
b. Implicit earning rate of the firm is 7 per cent.
c. Retirement age is 65.

See Table on opposite page.

Not only should the end-of-period liability be estimated, but a recalculation of the liability at the beginning of the period should be made if events have been substantially different from those previously anticipated. This is necessary in order to

SM Co., Inc.
December 31, 19X2

Computation of Estimated Liability for Future Retirement Pensions Under a Cash Disbursement Method
(not yet adopted)

Age Group	*Expectation of life years*[a]	*Years after age 65*	*Number of workers in group*	*Present value factor*	*Estimated intrinsic pension liability*
30	42	7	25	0.5047	$ 18,930
31	41	7	30	0.5401	24,300
32	40	7	35	0.5779	30,340
33	39	7	27	0.6183	25,040
etc.					
40	33	8	45	1.1002	74,260
50	24	9	35	2.3614	123,970
60	17	12	30	5.6630	254,840
65	14	14	22	7.8109	257,760
			540		$5,600,000[b]

[a] Source: *Life Insurance Fact Book 1955* (New York: Institute of Life Insurance, 1955), pp. 98–99, (figures for "United States Total Population," rounded to nearest year for this model).

[b] Rounded from, say $5,589,610.

make a proper adjustment in the figures to reflect the impact of the events on prior periods and current financial operations. This will be illustrated in the section on financial presentation. Of course, what is shown here is a very rough calculation for the purpose of illustrating a point. In an actual situation in which a more complete calculation is desired, the assistance of an actuary or pension consultant could be obtained.

Implicit Earning Rate

Attention must be called to the fact that it is necessary to arrive at a rate (or range) of implicit earning power of the firm. This might be approximated in a number of ways, and is very difficult, conceptually and technically, to establish. Average net income to average net worth, for example, appears as entirely inapplicable for the purposes outlined here. In constructing the schematic model, it is assumed that appropriate rates have been established for our use.

Since the deferred obligation for worker-retirement will have to be met from the firm's own resources, its own implicit earning rate applies. There is no investment in securities or insurance so that future superannuation costs may be looked at as charges against retained earnings.

Financial Presentation

Following the SM Co., Inc. schematic example, these figures are assumed:

a. Present calculation of intrinsic retirement-pension liability:

As at December 31, 19X2......	$5,600,000
As at January 1, 19X2.........	4,900,000

b. Previous (December 31, 19X1) calculation:

As at January 1, 19X2.........	$4,800,000

The existing liability (which may be in the worksheet make-up of financial statements, of course, and need not appear formally in the books of account) is $4,800,000. But if what is assumed now had been assumed a year ago (January 1, 19x2), the figures would stand at $4,900,000. The proforma entry, then, might appear as noted on the following page.

The discerning reader will recognize that failure to have a pension plan that must inevitably be adopted implies failure to take advantage of the tax benefits that attach. This benefit foregone may be regarded as one of the current costs of not having a formal pension plan.

The subject of financial statement presentation should not be left without re-emphasis of the purpose intended for the figures. They are ***for management use*** in planning, and are designed primarily for that purpose. It is not proposed that the tax law should be revised immediately to incorporate these notions, although in the course of time our socially-inspired tax law must include provision for all cost functions operating in our economic system. The cost of industry's responsibility for the security of workers in retirement, surely is one of these.

	Dr.	Cr.
Implicit reduction of future income tax obligations	400,000	
Current labor and salaries cost	700,000	
Retained earnings	50,000	
Implicit reduction of current period income tax cost		350,000
Estimated intrinsic liability for future pensions		800,000

	Intrinsic Pension Liability	*Implicit future tax reduction**
Previously foreseen	$4,800,000	$2,400,000
Increases applicable to 19x1 and prior	100,000	50,000
Adjusted figures, January 1, 19x2	$4,900,000	$2,450,000
Estimated amounts at December 31, 19x2	5,600,000	2,800,000
Current Changes	$ 700,000	$ 350,000

* Assuming a 50-per cent tax rate.

COMMENTARY

As productivity increases and work-weeks decrease, life expectancy grows and the opportunities for leisure-time and retirement pursuits grow. This is not speculation, but present reality. Therefore we must take account of the attendant sacrifices and benefits even when there is no immediate legal obligation to do so. It is a responsibility management planning and financial presentation cannot disregard.

The thoughts and techniques brought out in this discussion originate with a sincere belief that the cost of retirement is not an ostrich liability; it is as real as the people who make up a business enterprise, and as real as the human depreciation[7] necessary and inevitable in their service to business.

[7] Cf. D. M. McGill, *Fundamentals of Pension Plans* (Homewood: Richard D. Irwin, Inc., 1955), p. 15 *passim*.

THE HUMAN SIDE OF THE DEFLATED DOLLAR BIAS

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EVERY SEMESTER when I review with a class of students the impact of price inflation on accounting, and every time I read a published article on this subject in an accounting or business publication, I become more aghast at the complete and universal uncritical acceptance of statisticians' superficial findings on this subject. Students particularly seem to be unhappy about the privations which they attribute to high prices.

In my opinion, such sadness is fallacious. It is based on views which are biased because those who hold those views have not considered circumstances that are ignored by the statisticians. Men of my age are to blame. Able writers of my age know better but they have been strangely silent. Great ability is needed to contest unanimous fallacies. The task probably is beyond my abilities, nevertheless I cannot remain silent in the presence of neglected truth and unwarranted sadness. I hope the following thoughts may bring some joys to saddened hearts.

This is not an attempt to present a balanced view of price inflation. This is an effort to counterbalance existing bias.

From a respectable source I recently received a statistician's chart showing that 1956 dollars are worth only twenty-nine cents in terms of 1900 dollars. Its explanation reads, "Based on BLS Index assuming 1900 equals $1.00."

In 1900 I was seven years old and I handled very few dollars, so I do not recall fully what dollars bought in 1900. However, I studied the chart and observed that there was very little change in charted buying power between 1900 and 1910. I earned dollars before 1910 and I spent them thoughtfully because I did not have enough dollars to satisfy all my spending desires. When I compared the chart with my knowledge of the present buying power of dollars and my knowledge of the buying power of dollars in the first decade of this century, I appraised it as ***Poppycock***. Then I recalled a wisecrack which one of my professors passed in a classroom in 1913, "There are three kinds of liars: Liars, damn liars, and statisticians." Although he did not say so, I got the impression that the last classification was presumed to be the lowest echelon.

The quotation was only a wisecrack and it should not be taken seriously. Like Christ, Joan of Arc, Washington, Lincoln, and countless other human benefactors, statisticians are unjustly judged by their contemporaries. However, there is a bit of truth in every wisecrack, and this wisecrack puts us on notice that the statisticians' findings sometimes convey erroneous impressions and lead to false inferences. It is human nature for those who misunderstand to blame someone other than themselves.

UNITS OF VALUE

The chart which triggered this protest is based on the assumption that values purchased by dollars in 1900 are comparable with values purchased by dollars in 1956, and I believe this assumption is unjustifiable. In 1900, dollars bought more of many commodities which are identified by the same words in 1956. But identity of language does not prove identity of substance or of quality or of worth.

In 1900 a thousand dollars bought more land, more buildings, more furnishings,

more garments, more pounds of food, more hours of labor, more tons of steel, more bags of cement, more feet of lumber, more bushels of grain, more bales of cotton, more horses, more mules, more wagons, more buggies, more sleighs, more brooms, more wash tubs, more scrub boards, more skin-cracking soap, more flat irons, more coal stoves, more tons of coal, more cords of wood, more carpet sweepers, more tooth fillings, more doctors' calls, more newspapers, more mail service, more cigars, more cigarettes, more whiskey, more castor oil, more epsom salts, more carbonate of soda, more of perhaps ten per cent of the medicines in a modern drug store, more of many other things, and none of still other things that we consider necessities or near necessities in 1956.

Some of these things are comparable, some clearly are not comparable, and the comparability of some is doubtful or unknown to me. Land is not comparable because nearly twice as many people in the United States with an average buying power of ten times or more per person want the same amount of land. Buildings are not comparable because numerous inventions and technological improvements now can be included which were unavailable in 1900. Garments, food, labor, steel, doctors' calls, and many other things are not comparable for reasons that are recited below. The others are comparable in some particulars. In some instances substance is identical but demand and use have almost disappeared. Increases in the costs of horses and buggies do not affect the living costs of many of us. Few modern women use scrub boards, wash tubs, and skin-cracking soap. Newspapers contained better grammar and fewer typographical errors in 1900, but coverage of world events was less complete and less prompt. Mail service was better in some particulars because post-office employees were dedicated to the ideal of serving in 1900, but air mail was unavailable.

In 1940 a friend of mine with one helper raised 1,800 acres of wheat each year. From what I have seen of farm machinery I believe one man could do this in 1956. In 1900 two men probably could not grow and harvest 180 acres of wheat per year.

According to the 1950 report of U. S. Steel Corporation, in 1902 a thousand dollars purchased five thousand hours of human labor and in 1950 a thousand dollars purchased less than 400 hours of human labor. If no allowance is made for by-products, the statistics in the 1950 report indicate that an hour of labor in 1902 produced about thirty pounds of steel and in 1950 about eighty pounds of steel. However, a larger proportion of by-products probably was produced in 1950, the steel was of better quality, and it sold at higher prices. From reading newspapers I know that steel rails rolled in 1902 contained flaws which could not be discovered by manufacturers, that these flaws caused rails to break under the weight and impact of rolling trains, and that the breakages caused train wrecks. In 1950 X-ray equipment enabled steel makers to find internal flaws and to deliver rails free of flaws. The steel itself in rails made in 1950 was better than the steel in rails in 1900, because in the intervening years scientists made many discoveries in the chemistry and heat treatment of steels and many improvements in productive processes. The statistics in U. S. Steel's 1950 report indicate that the average selling price of steel in 1900 was about $48 per ton and in 1950, $130 per ton. This price increase undoubtedly affected the curve in my statistician's chart, but no allowance was made for the greater strength, safety, and therefore value of steel in 1950.

It is necessary to take account of substitutions in evaluating dollar purchasing

power. Wood furniture manufactured in 1900 is vastly superior to wood furniture manufactured in 1956, but the steel desks, chairs, tables, shelves, and cabinets available in 1956 were unavailable in 1900. They have many advantages which may adequately compensate for their extra cost. In those instances where the advantages of steel compensate for the difference in price between modern steel and ancient wood, there has been no change in the buying power of dollars expended for steel furniture, but the statisticians' curves do not allow for increased utility of substitute commodities and products. Other substitutes for wood products available in 1900 include asphalt roofing, asbestos shingles, hardboard, steel lath, gypsum lath, steel joists, reinforced concrete, rubber floor tiles, sound absorbent walls and ceilings, and waterproof plywood molded into shapes which required much labor in 1900. An example is boat hulls.

HOMES AND THEIR FURNISHINGS

I remember the home I lived in from 1903 to 1908 when my father had a dollar income comparable with mine in 1956. In 1903 it had gas jets for lights. They were immensely safer than oil lamps. Their dim yellow flames resulted from combustion of the impurities in the gas. Reading at night in those days was a method of ruining eyesight. Each time we turned on a light, we ignited the gas with a sulphur match. These smelled of the sulphur which was smeared on each stick. They were more dangerous and more costly than the safety matches which were subsequently invented and which now are in common use.

I recall the thrill of a miraculous invention. Buttons were installed in the walls at elbow height. By some incomprehensible magic we could turn on the gas and light it by pressing a white button and we could turn it off by pressing a black button. We could turn on the light in the downstairs hall by pressing a button upstairs. Mother glowed because she could turn on a light downstairs from a safe place upstairs if she though she heard a burglar during the night. I suppose this magic originated in some dry cells.

At a later date gas mantles became available. For the first time in our lives and in human history we had bright white lights at night. The mantles were made of fiber ash so they were fragile and had to be replaced frequently, more often than modern electric bulbs at a comparable unit cost. Unquestionably our unsatisfactory lighting in those years cost more than the excellent and convenient lighting now available to almost everyone.

Natural gas and electricity were unavailable for cooking in our home between 1903 and 1908. I suppose the impurities in artificial gas would have deposited so much soot on pans that its use was impractical. We and our neighbors used coal for cooking. I rose early and started the fire in the cook stove so that mother could prepare breakfast. This involved dumping the grate, removing clinkers and ashes, and unavoidable dust in the kitchen. It also involved laying and lighting a fire with a sulphur match and maintaining available supplies of wood and coal, a large supply away from the kitchen and a small supply in the kitchen so that mother could keep the fire going all day without carrying coal. Although wood then cost less per cord and coal cost less per ton, I am confident that the cost of cooking per month on the coal stove was greater than cost of cooking per month on a modern gas or electric range. The rise in costs of wood and coal affect the statisticians' charts, but they do not measure the buying power of the dollars I spend on cooking. Dollars buy more family cooking in 1956 than they bought in 1900.

Until 1908 we refrigerated with ice cut

from ponds in the winters and stored under sawdust in ice houses for summer use. After that we had artificial ice. There was no defrosting. The ice man brought seventy-five pounds every other day, and once every week or two we cleaned out the slime caused by dust settling on melting ice. We had ice pans under ice boxes to catch the dripping water until some ingenious soul invented funnel shaped drains to catch the drippings and carry them outside. It is amazing how long the human race has waited for some very simple conveniences.

I do not remember what we paid for ice in the first decade; however, I do remember that in the twenties it cost me about five dollars per month to keep my twenty-dollar ice box filled with ice. In 1929 we bought for $250 our first electric refrigerator, a GE with an ugly dust-catching monitor on top. It lasted thirteen years. Then we traded it for $20 on a better quality, better looking GE, priced at $250. It still is in use fifteen years later. The depreciation on our first GE was about $1.50 per month and the electricity cost less than fifty cents per month. Commencing in 1929 we had better refrigeration at less than half of the cost of prior refrigeration. Commencing in 1942 we again improved our refrigeration at lower cost as is evidenced by the longer life of our second GE. In 1956 better GEs than the one I bought in 1942 were available at $250. The buying power of my dollars spent for refrigeration has increased 150 per cent or more since 1920. I do not have comparable data for 1900, but I am sure modern electric refrigeration costs a family less per month in 1956 than ice refrigeration cost a comparable family in 1900.

FOODS

Foods cost more in 1956 than they cost in 1900, but 1956 foods are more sanitary, more tasty, and more varied. Beef quality has improved greatly. Fryers come without pinfeathers and with inedible parts removed. Until ten or fifteen years ago pinfeather picking and the stench accompanying the drawing of the entrails discouraged chicken consumption. Drawn chickens without pinfeathers are worth twice as much per pound to me as undrawn chickens with pinfeathers, but the price per pound has not doubled.

In 1910 I delivered milk for a dairy. It sold for eight cents per quart. Now milk sells for twenty-five cents per quart, but the two products are not comparable. In 1910 cows were milked by hand, and thousands of people died of typhoid transmitted by milk from the hands of typhoid carriers to whole communities. Milk was put into ten-gallon cans and these were taken to springs to cool through partial immersion in spring water. In 1956 cows are milked by machine, the milk is not exposed to germ-laden barn air or germ-laden hands, and is in refrigerated pipes seconds after it leaves a cow. I think I get more value for my dollars when I buy modern milk at twenty-five cents per quart than consumers got in 1910 when they bought milk for eight cents.

Many of the foods available in 1956 were not available in 1900. Rail transportation was so slow and refrigeration en route so primitive that fresh vegetables were not available out of season and fish were not available far from the ports where they were brought to shore. Grapefruit, delicious apples, seedless grapes, golden bantam corn, frozen foods, dry cereals, certo, and cake mixes were unavailable in 1900. Store jams and jellies were repulsive to most people's taste because of their poor quality, fewer condiments were available, and those available were inferior in quality to those available now. Carrots and some other vegetables were not as palatable because horticulturists since 1900 have developed new varieties which are sweeter and more flavorful. Vinegar and molasses were purchased in barrels and sold by gro-

cer in returned milk bottles which looked clean when held up to the light.

TRANSPORTATION

In 1900, a horseless carriage cost $5,000. It lacked a top, a windshield, starter, lights, fenders, bumpers, and a muffler. It was driven by chains whose rattling could be heard blocks away between explosions of expelled gases. While riding, conversation was impossible. Parts were individually fitted and were not interchangeable. They were made of ordinary steel which wore out rapidly. There were no repair garages. When a car stopped it was horse-towed to the nearest machine shop where, in two or three weeks, a part could be made to replace the one that was worn or broken, and fitted by cut and try methods. I wonder what the statisticians do with these facts in their charts of rising prices. Jaloppies that sell for $100 today are infinitely superior to the five-thousand dollar horseless carriages the manufacturers produced in 1900, and interchangeable parts available today are much better in quality, much lower in price, and less expensively installed than the hand-fitted parts made in 1900. Tire carcasses were made of fabric. Dollar prices per tire exceeded present prices per tire and tire life was about one tenth of present tire life. Cost per tire mile at ten to twenty miles per hour in 1900 was ten times the cost per mile at sixty miles per hour in 1956.

Motor boats were known as naphtha launches. Horseless carriages and launches used naphtha, gasoline from which the volatile oils were not removed because the oil companies did not know how to remove them. Explosions were common and cremations of drivers and passengers in those explosions were not uncommon. There were few pavements in the cities other than cobblestones in downtown areas, and there were no pavements outside of the cities. Driving speeds were ten to twenty miles per hour in clouds of dust. Blowouts and punctures occurred frequently. A hundred miles without a puncture or a blowout was an extraordinary bit of good fortune. It was necessary to stop for every approaching horse-drawn vehicle because horseless carriages frightened horses and the driver of a horseless carriage could not risk causing a runaway. People were killed by runaway horses. Starters consisted of hand cranks. Many motorists received broken arms when motors backfired while being cranked. Compare the value a motorist got for $5,000 in 1900 with the value he gets in 1956, and tell me whether the purchasing power of dollars spent on motoring has increased or decreased.

There were no auto trucks in 1900. Heavy hauling was done on horse-drawn wagons. The wheels of the first auto trucks had solid rubber tires because pneumatic tires could not be made strong enough. Pneumatic tires for trucks arrived in the twenties.

There were no steel passenger cars on the railroads in 1900. When an engine ploughed into a train of wooden cars, it telescoped them, went right through the interior lengthwise. The loss of life was almost total. Cars were heated by coal stoves. If an accident occurred in the winter, the stoves set fire to the wood and passengers pinned alive in the wreckage were burned to death. The railroads had no overland competition, consequently freight and passenger services were unsatisfactory by comparison with modern practices. Fares were less per mile, but I believe a passenger gets more value per dollar in 1956 than he got in 1900. In 1956 he gets safety, speed, comfort, and cleanliness which were unavailable in 1900. On some trains he gets air conditioning in 1956. On some trains it is possible to read in 1956, but the rough riding in 1900 made reading impossible for most people.

In 1908 my mother and father with two

of their friends drove by horse and buggy to visit Gettysburg, about twenty-five miles from our residence. They travelled on unpaved roads. They drove all of one day to get there, spent a day there, and returned the following day. Incredible as it may seem to a modern youth, they counted it as a pleasure trip.

In 1922, I drove a model T Ford touring car from Cleveland to Columbus, Ohio, a distance of about 160 miles, in eight hours. We arrived hot, exhausted, and dirty. Very few of the miles were paved and many of them were so rough that speeds in excess of fifteen miles per hour would have wrecked the car. Even at low speed our up-and-down bouncing probably added several miles to the distance we travelled horizontally. Now the distance from Cleveland to Columbus is about 140 miles. It can be driven safely in three hours and travellers arrive fresh and clean.

In 1940 we drove 9,500 miles from Ohio to the west coast and back and to many places of interest en route. Most of the roads were paved and we could conceive of no greater luxury.

In 1956 we drove over some of the same territory. The 1940 road still was visible in some places. It wound and twisted as it followed the contour of the mountain sides. It was narrow and without guard rails. In minutes we covered distances which had required hours of patient plodding in 1940. At times we marvelled that we had had the courage to traverse those 1940 roads and wondered if perhaps it was not foolhardiness. We have become so accustomed to broad highways that we had forgotten the narrow winding highways we used to travel. For a few hundred dollars we enjoyed the privilege of travelling in dust-free air-conditioned comfort on billions of dollars worth of safe pavements planned wisely by thousands of engineers and laid skilfully by hundreds of thousands of workmen. The trip cost more per mile in 1956 than it cost per mile in 1940, but the time on highways was halved, the strains were reduced, and the comforts and other satisfactions were increased.

The statisticians' tables and charts are affected by changes in the costs of autos, gas, and oil, but I believe I got more pleasure and satisfaction per dollar of expense in 1956 than I got in 1940. For me, the buying power of those dollars had increased.

OTHER COMMODITIES

In 1900, an awkward home-made improvisation for a modern band-aid required time to make and probably cost more than a modern band-aid. Many other modern conveniences are less expensive than the awkward improvizations they have supplanted. These savings in cost affect the buying power of dollars, but they are not given weight in statisticians' charts and tables. Wall paper costs more per roll and costs more to apply in 1956, but in 1900 there was no satisfactory method of cleaning wall paper because wall-paper cleaners were not available. There was more dust in the air indoors and outdoors because streets were not paved and vacuum cleaners were not available. Thus in a modern home wall paper has a longer life and if the cost of maintaining satisfactory paper per year of service has increased, it has not increased in proportion to the costs of paper and its application. The statisticians' charts and tables are affected by the increases in costs per roll of wall paper and its application, but the true buying power of dollars is cost per year of service.

Men's shirts have risen substantially in price per shirt since 1900, but cost per week or per month or per year of wear have not increased proportionately because modern detergents are not as hard on clothes as the harsh soaps available in 1900, modern mechanical washing methods are not as hard on clothes as the hand scrubbing of 1900, and shirts made of some

modern synthetic fibers wear and keep their original lustre three or four times as long as shirts made from natural fibers. I believe my shirts cost less per month of wear in 1956 than men's shirts cost in 1900 and I know that their appearance is far superior.

In 1900 women could be hired to wash clothes for a pittance per day, but I believe a modern domestic washing machine performs the task better at a lower cost. Mother's first washing machine was purchased about 1912. It was powered by spigot water. It lasted about two years. Then she purchased an electric washer at a dollar cost which just about equals the dollar cost of a much better electric washer today. Badly soiled parts were hand scrubbed before clothes were put in the washer. Wet clothes were lifted from the washer into a wash tub, rinsed by hand, and wrung in a hand wringer. The machine merely reduced the amount of hand scrubbing in water containing skin-cracking soap. If it were shown to a modern woman she would say, "I would not give that ark floor space if someone made me a present of it." Yet it cost as many dollars as a modern electric washing machine, it was not nearly as well made, and had a much shorter useful life.

In 1900 there were no vacuum cleaners for home use. The carpet sweeper was a recent invention in 1900. It removed light substances from the surface of rugs. The sand and grit were removed by taking the rugs outdoors and beating them with carpet beaters. Rugs cost less per square yard but the beatings shortened their lives, consequently the cost per year of keeping floors covered with rugs or carpets has not increased as much as prices per square yard. The statisticians' charts and tables are affected by increases in costs per square yard but dollar buying power has changed according to costs per year. Costs of cleaning rugs have declined. Running vacuum cleaners over rugs is less expensive than beatings even if the beaters received only fifty cents per rug or a dollar fifty per day.

In 1900 there were no electric irons. Mother did the ironing winter and summer standing beside the coal stove. She owned several flat irons which were all put on the stove at one time and used one at a time.

In 1900 there were no hot-water thermostats. Our hot water tank was connected to the furnace and the coal stove, and the coal fires therein heated the water in the tank. The tank was not insulated. Either the need for insulating materials had not been recognized or satisfactory materials were not available. Asbestos became available for such uses after 1900. Other insulating materials were objectionable because of the fire hazard. Hot water also was heated in tea kettles on kitchen stoves.

The other electrical appliances did not become available until homes generally were electrified and this was some years after 1990. Electric toasters appeared on the market in the second decade, but automatic toasters were about ten years later. Someone had to watch the original toasters, turn the toast, and remove it in time to prevent burning. Electric stoves arrived at about the same time, but the heating elements on the first stoves were less efficient, slower, and more expensive than modern heating elements. I bought my first electric stove in 1922 and the cost of cooking on it averaged about fifteen dollars per month. I replaced it with a gas stove as soon as I was able to get natural gas. Refrigerators and radios followed in the third decade. Deep freezers, air conditioners and television sets developed in the fourth and fifth decades.

In 1900, Gramophones squeaked, rasped, and squawked, thus the world's great music was unavailable to most peo-

ple. Only a few of the large cities had symphony orchestras and opera companies, and only a few residents of those cities could afford to attend the performances.

In 1900 golf was available to few who did not have private golf courses. It was known as "the rich man's game." In 1902, on the first public course I played, the fairways were maintained by grazing sheep on them. Power mowers were unavailable. Horse-drawn mowers were good only for cutting tall weeds and hay. Very few public tennis courts were available. One of our neighbors maintained one on a vacant lot next to his home. It was a clay court with tapes stapled in the ground to mark the lines and children were not allowed to play on it. I believe the average cost of golf games and tennis games is lower in 1956 than it was in 1900.

Some other commodities which are commonplace in 1956 and which were generally unavailable in 1900 are aluminum products, stainless steels, plastics, power driven farm and construction tools, cement blocks, and motion pictures. Movies became available in the first decade and talkies in the third.

MEDICAL SERVICES

A physician's call costs more in 1956 than it cost in 1900 and the medicines available in 1900 cost more in 1956, and these increases have affected the statisticians' measurements of the buying power of dollars. Those measurements assume that a doctor's call in 1900 was worth as much as a doctor's call in 1956. This assumption is untenable. The progress of medical science and the increased knowledge of modern physicians make a doctor's call in 1956 worth many times as much as a doctor's call was worth in 1900.

When my first grand-daughter arrived she was the victim of an epidemic. Aureomycin saved her life. Babies who did not get aureomycin died in the hospital. It was a new product at that time, unknown to many doctors. In 1952, I contracted an ailment which would have been fatal to me if I had contracted it in 1900 or during the following three decades. Remedies were available in 1952 which were unknown in 1900. In 1900, my doctor would have made me as comfortable as he could until the end came. In 1952, my doctor gave me vigorous life which has continued for more than four years and which I expect will continue for many more years. It is impossible for me to believe that I did not get more per dollar for my five dollar calls in 1952 than I would have received for two dollar calls in 1900.

THE THREAT OF INFLATION

On the day before this sentence was written I received information that living costs have increased 3.1 per cent in the last year. This worries many people who fear that we may have a runaway inflation. A runaway inflation in the United States will not occur while people in other parts of the world pay a premium for dollars to get the products and commodities that dollars will buy. When the United States has to block remittances to foreign countries to protect its gold reserves, a runaway inflation will be a possibility.

THE FUTURE

In our land of freedom and ingenuity the future always has transcended current imagination. Those who know, tell us that scientific advances are being made at an accelerating rate. We don't know all of the particulars, but we do know that regardless of rising price levels the American standard of living will be higher in the sixties than it was in the fifties.

Until a year ago I regarded air conditioning in a car as a rich man's gadget that probably would entail more grief than satisfaction. Then I bought a used car equipped with air conditioning because I got it at a price which made the air conditioning cost me nothing. After using it one

summer I know that every car I buy in the future must have air conditioning, and I know that in the warmer parts of the United States a few years from now, ninety per cent of the new cars sold will have air conditioning.

In my home I have had central air conditioning two years after one year of experience with window conditioners. In a few years, homes without central air conditioning will be obsolete.

Highway improvements are on the way which will make 1956 highways seem as antiquated as 1940 highways seemed to me during my trip through the western mountains last summer. More education for more people is in the offing. The day will come when radio and television broadcasts will be pitched higher than the moron-level. Other developments which are inconceivable now will materialize soon.

CONCLUSION

My message, particularly to young people, is: *rejoice*. If World War III can be avoided, you will enjoy a future better than the pasts enjoyed by any of your elders. Today, on your meager incomes, you enjoy pleasures and comforts that surpass those enjoyed by any king or potentate in history prior to 1900. They travelled in horse-drawn vehicles on dusty roads. They received news days or weeks after events occurred. They never heard the voices of loved ones hundreds or thousands of miles away. They had no fountain pens nor hundreds of other petty conveniences which you accept as commonplace. Most of them had no anaesthetics nor medical and surgical care comparable to what you get.

In 1900, John D. Rockefeller and Andrew Carnegie could live in large houses, employ numerous servants, entertain hordes of guests, travel in private railroad cars, and play golf on private courses which were not as good as the public courses now available to everyone. I don't envy them any of those luxuries. I prefer my little air conditioned home with its electrical gadgets, none of which they had in 1900. I would like to have a private yacht, but I would not trade for a private yacht all of the things that I have that Rockefeller and Carnegie did not have. On balance, I would not trade my living standard in 1956 for their living standard in 1900. In other words, my teacher's income buys me a higher living standard in 1956 than their millions bought them or could have bought them in 1900.

In these circumstances I assert that it is *poppycock* to talk about the decline in the purchasing power of dollars since 1900. On average in 1956, a dollar buys more human satisfaction than it could buy for me and for a hundred million other citizens of the United States in 1900. In terms of human satisfaction, the buying power of dollars has increased enormously since 1900 and it will continue to increase. From year to year there may be petty fluctuations, like the 3.1 per cent quoted above, but that is not entirely real because the statisticians gave no weight to the incidence of Salk vaccine. My grandchildren and my children were immunized during the past year. That is worth a thousand times as much to me as the 3.1 per cent extra that I suppose I spent for meat, potatoes, gasoline, and other necessities. Counting the immunizations, I got more satisfactions from dollars in 1956 than I ever got in any year before. In terms of human satisfactions, the buying power of my dollars went *up* in 1956. *Up* is anti-inflationary in terms of human satisfactions.

COMMENTS ON THE AUDITS OF SCHOOL DISTRICTS

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SPENDING for public schools has been placed at about 2.8 billion dollars for the current year. The need for school funds is so intense that there are several bills before Congress providing for federal aid to education. This is the latest ramification of the "school problem" which has been an issue in nearly every political campaign since World War II. The problem has been brought about by increased enrollment coupled with a considerable lag in school construction during the thirties and early forties. The solution has been greater use of taxpayer funds for new classrooms and increased faculty. Public education has become big business.

This tremendous growth has not been accomplished without administrative complications. School organization is being revamped to reflect modern-day business practice. In particular, the installation of uniform accounting procedures is becoming a necessary element in school organization. Hand-in-hand with internal modifications is the need for adequate disclosure of school operations to the suppliers of funds—the taxpayers. However, disclosure is insufficient without a critical review of the accounting procedures, records, and documents on which the disclosing statements are based. This paper is concerned with the auditing of school records.

Literature bearing upon the audits of school districts is limited. Very few textbooks or technical journals deal specifically with the topic. At least one doctoral dissertation is devoted to audit requirements for a single state and one master's thesis is concerned with the administration of a particular school fund.

In order to obtain more comprehensive information, a questionnaire was sent to the chief school officers of each State, U. S. Possession, U. S. Territory, and U. S. Commonwealth requesting data regarding statutory provisions for audits, audit directives from the chief school officers, internal control questionnaires, audit programs, and the identification of the unit performing the audit. Replies received from school officers in forty-seven states, two territories, and one possession provide the basis for the following comments.

STATUTORY PROVISIONS

Forty-eight replies indicated some type of statutory provision for the audits of school districts. These statutes fit into two general classes. The first provides for audits of school districts per se, while the second provides for audits of state political subdivisions which should include school districts within their jurisdiction.

Two replies disclosed the fact that there is no statutory provision in these states but that the local governing bodies can employ a CPA firm for audits if they so desire.

AUDIT PROGRAMS

Seventeen replies indicated some form of audit program. The majority of the programs emphasized the annual financial statements to be prepared rather than detailed procedures to be used in the verification of financial data. The statements included schedules of payment on indebtedness, of receipts and disbursements, and of uncollected taxes. One program included a supplementary report on internal accounts, while another included a report on

methods to improve accounting procedures.

One reply indicated a detailed audit program that requires an examination of cash in bank and on hand, investments, inventories, property and equipment, bonded debt, insurance and surety bond coverage, receipts, expenditures, and internal school activities. Another reply indicated first, that the state's Board of Accountancy cooperates with the auditing agency in devising audit programs and, secondly, that reporting standards must meet "generally acceptable auditing standards."

WHO PERFORMS THE AUDIT

State auditing agencies are employed by fifteen states and one territory. The agencies vary from the Bureau of Supervision and Inspection of Public Accounts to the State Tax Commissioner. The distinction between the agency requesting the audit and the agency performing the audit often is not clear. The agencies involved may shed some light on the purpose of the audit in the particular state.

Either state agencies or CPA firms are employed by thirteen states and one territory. The size of the operating expenditures of the school district, the vote of the school district governing body, and the preference of the state department of education are typical determining factors in the selection of the type of auditor to be employed. It is common in some states for the statute to require that the local district's choice of auditor be approved by the state department of education.

Seven states and one possession employ only CPA firms. The selection of the particular CPA firm may rest with the township's land commissioner, the local board of education, or the county board of school trustees.

Either CPA firms or municipal auditors are employed by five states. The local school board or the vote of the local electors may decide the selection of the auditor. Two states employ one of three types of auditors: CPA firms, municipal auditors, or state auditors. Two other states employ only municipal auditors. (The "municipal auditors" include licensed municipal auditors, the county superintendent, and the chancery clerk.)

FREQUENCY OF AUDIT

Nineteen replies indicated that the statutes require annual audits while five indicate a biennial statutory requirement. Two other replies stated that audits were required at least once every three years in the one state and at least once every four years in the other state.

The frequency of the audit is typically determined by the local school board or the state department of education. One statute requires an annual or biennial audit depending on the "class" of the school district. Regardless of these variations, annual audits appear to be fairly typical.

AUDIT FEES

Either the statute or the local governing body of the district usually sets the audit fee. The local district pays the fee in eight states and a state agency pays the fee in one state. In another state the fees are split between the school district and the state agency depending on the auditor that was employed.

PECULIAR REQUIREMENTS

The audits of school districts differ so markedly by jurisdictions that no general conclusions can be drawn, but requirements peculiar to individual states are of interest.

Statute A requires an audit of all districts with a population of 1000 or more. The audit is requested of the state examiner by the local school board chairman or by petition of 35 per cent of the voters in the district.

Statute B requires an auditor to "inspect" the legality of the records. In particular the audit determines whether the district funds are collected, accounted for, and expended legally.

Statute C requires audits only for the purpose of detecting fraud in the use of funds with principal attention of the audit directed toward attendance records. This last provision is not peculiar to Statute C; most statutes require cursory examination of attendance records as part of the overall audit.

Statute D may request an annual "post-audit," defined as an audit "made at some point after the completion of a transaction or a group of transactions."

Statute E elects an auditing committee, one member to be an elector of the district. This committee examines all account books, vouchers, money, and property; and prepares a written report on its findings.

Statute F specifically points out that the auditing agency is not authorized to examine or to report on the curriculum used or provided for.

Statute G provides for a fine of not less than $100 or more than $500 for an auditor who knowingly makes a false report and is convicted thereof.

Statute H sets forth as a criterion for the accrediting of schools the audit of all funds by a person not directly connected with the school.

SUMMARY

The critical review and appraisal of school accounting records and procedures is an essential step in the continuing development of more effective school administration. As school facilities and faculties grow, the school executive must rely on proven business techniques. The results produced by these techniques should be disclosed to interested parties. It is the auditor's function to consider whether the disclosures fairly reflect the results of school operations. It appears that each state has different audit requirements. A hopeful approach might be the establishment, by the accounting authorities in conjunction with education authorities, of auditing procedures and accounting principles for school districts.

JOINT COST ANALYSIS AS AN AID TO MANAGEMENT—A FURTHER NOTE

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In his reply to my rejoinder, Professor Lorig refers to my contention that the value method of joint cost apportionment is highly arbitrary. He rightly suggests that one of my objections to this method lies in the fact that I do not accept the implicit assumption, "that every dollar invested in the joint products is equally profitable." I cannot see why if one accepts this, one cannot accept the assumption that all dollars invested in the joint process are not equally profitable.

Professor Lorig has anticipated this possible argument and has merely assumed it away by saying that it is out of harmony with the concept of joint costs, whereas the assumption used is harmonious with this concept. Unfortunately, Professor Lorig does not define his concept of harmony in this respect.

If the assumption that each dollar is equally profitable is to be true at all times, then the total cost of a joint product must, proportionately, never exceed the total cost of any other joint product—individual sales values being the basis for comparison.

How then can Professor Lorig reconcile this situation with the conditions which obtain in his second example? In this case the total cost of product A is calculated (via the sales value method) as being $2,400,000. This figure is certainly proportional to the respective sales values, but it is not a true total—the separate processing costs of A alone amount to $2,800,000. Does not this refute the suggestion that each dollar invested is equally profitable?

Professor Lorig appears to be under the impression that my criticisms are directed solely towards the value method of joint cost apportionment. It may well be that I did not make the arguments in my rejoinder perfectly clear, but my objections are to accounting techniques, generally, which attempt to arrive at an individual cost and profit for each of a series of joint products.

That is to say, my argument in this respect is that it is impossible to arrive at an individual cost, and hence profit, for each of a series of joint products. True, an accounting profit can be calculated in all these cases, but this is merely an allocation, on some arbitrary basis, of the total profit of the entire joint process. As I indicated in my rejoinder, this accounting-type profit is likely to be quite unreliable for decision-making purposes because it will not usually reflect a true picture of the profit or loss which would be forgone by scrapping a product at split-off point. Although the exact effect upon profit can be determined when the scrapping of either product at split-off point is contemplated, it should not be thought that the amount of the decline in total profit brought about by the dropping of a given product, is the profit of that individual product. In both Professor Lorig's examples the aggregate of the respective decreases in total profit amounts to $8,000,000 whereas the total profit of the process is only $4,800,000. This situation is the arithmetical result of there being a fixed cost factor namely, joint cost, which does not decline when either product is regarded as waste at split-off point.

My argument that it is impossible to arrive at an individual profit for each of a series of joint products is based upon the fact that a joint cost is an expenditure incurred in the production of a series of prod-

ucts, all of which must be processed or none.[1]

Having obtained the joint products at the point of separation, a producer cannot possibly say what is the separate cost of each up to that stage. All that is known, or can be ascertained, is the total cost (that is joint cost) of the processing up to split-off point. Once joint costs have been incurred they become, so to say, fixed over the rest of the processing. They constitute a fixed factor over what may be termed the second stage of a short run productive process. It follows, therefore, that any joint product which, having covered its separate costs of further processing, can produce a surplus making some contribution to joint cost, will obviously assist in the recovery of the factor (joint cost) which is variable in the first stage of the joint processing and fixed over the second stage.

Now, it is an unquestionable fact that the employment of certain accounting techniques will cause the loading of certain joint products with a proportion of joint cost, which will frequently be in excess of the contribution to joint cost as defined in the previous paragraph. In other words, when the allocated joint cost burden is in excess of the individual joint products' contribution to joint cost, there will be an apparent loss on a joint product. As explained this is in no way a real loss. It is merely an accounting loss revealed as the result of a calculation based upon limiting assumptions. If, as a result of adherence to an accounting technique which indicated a loss on a joint product when in fact this product was making some contribution to joint cost, the further processing of the joint product was dropped, then it is my contention that this state of affairs should also lead to the dropping of the accountant who advocated such a method in the first place. Is it not blatantly evident that the joint cost will in no way decline as a result of the decision to cease the processing of the hypothetical joint product?

The only factors which will decline in this case will be the further processing costs and sales value. If the sales value exceeds the special processing costs, then, it is obvious that some contribution to joint cost will be thrown away if this joint product is dropped.

The essence of my argument in this respect is that once joint processing has been undertaken, any product which will produce sales revenue in excess of separate processing costs should be subjected to further processing.

This is exactly the recommendation which Professor Hill makes,[2] but which Professor Lorig has not understood. This is evident from the following quotation from Professor Lorig's reply.[3]

"He (Professor Hill) does not, however, indicate what he means by the more conventional approach. If he means that the special processing costs of each product should be deducted from the sales value of that product to arrive at sales value at the point of split-off—the ratio of sales values thus obtained to be used for apportioning joint costs up to that point—then he must assume (as pointed out in my paper) that all profits included in the final sales values of the products are earned prior to the split-off. Again I must contend that this is an illogical assumption."

If my interpretation of Professor Hill, with whom I am in complete agreement, is correct, Professor Hill is advocating the orthodox economic theory approach to this problem,[4] which in my opinion is infi-

[1] This situation refers only to the case of truly joint products where, in the short run, there can be no variation in the ratio of the output of the joint processing. It is this situation which Professor Lorig postulates in his original article. THE ACCOUNTING REVIEW, October 1955, page 634.

[2] THE ACCOUNTING REVIEW, April 1956, page 205.

[3] THE ACCOUNTING REVIEW, October 1956, page 594.

[4] See in particular F. W. Taussig, *Principles of Economics*, Vol. 1, Third Edit. Revised, The Macmillan Company, page 215; and T. J. Kreps, "Joint Costs in the Chemical Industry," *Quarterly Journal of Economics*, May 1930.

nitely more satisfactory than any conventional accounting technique with which I have yet come in contact.

Professor Lorig suggests that my second basic criticism of his paper was, in effect, that his procedure was inapplicable in the short run.

My criticism was not this at all, it was that Professor Lorig had not clearly analysed short run and long run considerations. Professor Lorig attempted to use the same analytical model for long run and short run behaviour and my contention was that this was not possible.

I still cannot agree with Professor Lorig's suggestion, "that where one of two 'joint products' charged with no joint costs cannot produce as high a percentage of profit to its sales value as the other absorbing all the joint costs, then it might be desirable to transfer all the production effort beyond the split-off point to the second product."[5]

[5] The Accounting Review, October 1956, page 595.

This is a suggestion that the producer would not have arrived at the optimum level of output in the short run. In this period, production will be carried to the point where the marginal cost and marginal revenue of output are in equality.[6] If this level has been reached, further output would be unprofitable because marginal cost would exceed marginal revenue on the further output.

Output would not be halted at a point prior to optimum because, on the further output to optimum, there is a profit to be made on each unit. This profit will normally accrue at a decreasing rate until marginal cost and marginal revenue are in equality. Such being the case a producer will already have extended his output to include these units. The question of transfering resources can never therefore arise.

[6] Under marginal calculus there is no attempt to calculate a separate cost for individual joint products. Marginal calculus merely compares increases in costs with increases in revenue which occur as a result of an increased output, and vice versa.

THE GUISES OF REPLACEMENT COST*

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Columbia Consultants

BELIEVING that financial statements could not serve managerial, tax and regulatory purposes well unless they were adjusted for price changes, accountants have, particularly during the last quarter century, been anxious to employ "replacement cost" in the calculation of income. On the other hand, they have been reluctant to depart from the original monetary outlay for assets, that is, from "cost incurred." *The compromise has been to present "replacement cost" so that it appeared to adhere to "cost incurred."*

The "last-in first-out," or LIFO, method of inventory pricing is a good example. As subsequent pages will show, LIFO implies a departure from cost incurred in favor of replacement cost or "current cost." Nevertheless, the departure has been accomplished in such a manner that students of inventory accounting are apparently convinced that no departure from cost incurred is involved. In an outstanding investigation of LIFO, the following statement appears:

> Still another distinction is that for inventory accounting the current-cost position (at least as approximated by Lifo) does not charge income with more than the actual dollar costs *incurred* by the business. It simply reallocates the order in which purchases and other inventory costs are charged against sales. In contrast, the current-cost concept applied to depreciation accounting would necessitate the deliberate charging against sales of more or less than the actual dollar cost of depreciable assets, depending on whether prices rise or fall.[1]

The definitive treatment of LIFO in the retail field states:

> It is important to note what the Lifo convention does *not* do. For instance, it says nothing about any costs that have not *actually* been *incurred*, any future costs of replacing present goods in stock. The point needs to be emphasized that the Lifo principle is not a replacement- or current-cost principle; Lifo merely rearranges the costs actually *incurred* without undertaking to anticipate any future costs of replacement.[2]

If, as the following pages suggest, this conventional belief in the nature of LIFO is not well founded, would it not be better to make the departure from cost incurred explicit?

ILLUSTRATIVE EXAMPLE

The contrast between the conventional "first-in first-out," or FIFO, calculation of cost of sales and the LIFO calculation may be seen in Exhibit I. The assumptions underlying this exhibit are that two units of inventory were on hand at the beginning of the year, that six more were purchased during the year, and that two units remained unsold at the end of the period. Note that inventory was maintained at two units! The even more interesting case of inventory liquidation will be discussed later.

In accordance with the "first-in first-out" method, the cost of the "opening inventory" would be the cost incurred for the two most recently purchased items of that inventory. In the example, the opening inventory might consist of two units purchased at $500 each in the previous year. The purchases (6 units at $750 each)

* This paper was an award-winning entry in the National Contest of the Dynamic Equipment Policy Center at Illinois Institute of Technology. Professors Sidney Davidson and G. Heberton Evans, Jr., of the Johns Hopkins University, and Mr. W. C. Fraser of the Olin-Mathieson Chemical Corporation provided many valuable suggestions.

[1] J. Keith Butters, *Effects of Taxation: Inventory Accounting and Policies* (Boston: Division of Research, Harvard Business School, 1949), p. 138. Italics supplied.

[2] Malcolm P. McNair and Anita C. Hersum, *The Retail Inventory Method and LIFO* (New York: McGraw-Hill Book Co., 1952), p. 332. Italics supplied for both uses of the word "incurred."

EXHIBIT I
CALCULATION OF COST OF SALES

	Method of Inventory Pricing	
	Fifo	*Lifo*
Opening inventory (2 units)	$1,000	$ 200
Purchases (6 units)	4,500	4,500
Available for sale	$5,500	$4,700
Less: Closing inventory (2 units)	1,500	200
Cost of Sales (6 units)	$4,000	$4,500

during the year are added to the opening inventory to arrive at a total "available for sale." Part of this quantity available for sale was sold, and part remained in inventory. The closing inventory for the FIFO method consists of two units of inventory that cost $750 each. The cost of sales of $4,000 consisted of the two units in the opening inventory at a cost of $1,000 and four of the units purchased during the year at a cost of $3,000.

The determination of cost of sales in the LIFO case is similar except that the goods sold are considered to be the most recently purchased goods. The closing inventory is assigned the same "cost" as the opening inventory because the same number of units were bought as sold during the year. The opening inventory has been assigned the "cost" of two units purchased by assumption when prices were substantially different. If, as in the present case, inventories are neither depleted nor accumulated, cost of sales will be identical with purchases.

CRITERIA FOR "COST FLOW"

This illustration suggests the necessity for a more careful consideration of the accountant's assumptions concerning the flow of costs through the firm. There are a number of assumptions concerning the flow of costs that might be made. The ones that have received the greatest attention are:

1. The assumption that cost flow coincides with the physical flow of goods. This is designated below as the "physical-flow criterion."
2. The assumption that costs flow so that the resulting charge to income gives an income figure that reflects the change in disposable cash. This is referred to below as the "disposable-funds criterion."
3. The assumption that costs flow so that the resulting charge to income gives an income figure that minimizes the variations in reported income from year to year. This assumption may be called the "stabilization-of-income criterion."
4. The assumption that costs flow so that inventories are carried at the lowest figure for which some justification can be found. This is described as the "conservatism criterion."
5. The assumption that costs flow so as to minimize the effect of inflation on reported profits. This is described as the "inflation-suppression criterion."
6. The assumption that cost flow should be determined in such a manner that no "unrealized" profits will be recorded. This is the "unrealized-profits criterion."
7. The assumption that the cost flow should result in the appearance of replacement cost or current cost on the income statement. This assumption is described below as the "current-cost criterion."

If LIFO is used for handling inventories, does it involve a departure from cost incurred as determined by these various criteria of cost flow? Moreover, how reasonable is each criterion of cost flow? LIFO could not, for example, be considered to adhere to cost incurred if the criterion for cost flow that was required to justify LIFO was neither reasonable nor useful.

The physical-flow criterion

Perhaps the most obvious criterion for cost flow is physical flow. This criterion re-

quires either specific identification of the units sold or that some reasonable assumption be made concerning their identity. If the strawberries that the grocer has on hand at the beginning of the period are sold before he sells the strawberries he purchased during the period, then the physical-flow criterion would justify the use of the "first-in first-out," or FIFO, inventory-pricing procedure. If a manufacturing company puts the nuts and bolts it produces on top of the nuts and bolts that constituted opening inventory, and if the nuts and bolts it sells are taken from the top of the bin, then LIFO would be employed.

If this physical flow criterion is adopted, LIFO can be defended only with difficulty for the steel, petroleum, and chemical industries where the raw materials generally flow through the furnaces, tanks, and kettles in what closely approaches a "first-in first-out" physical flow. The pulp and paper industry, the textile industry, meat packers, and food producers, all these would also have difficulty applying LIFO to their particular product flows. But these are the very industries in which LIFO is most popular.[3]

Many who support LIFO argue that physical flow need not determine cost flow. But the following comment should be borne in mind:

> Economic flow may not jibe with physical flow from the standpoint of all possible theoretic conceptions, but the burden of proof should fall very heavily on those who insist on the adoption of any accounting procedure which can be demonstrated to be fundamentally at odds with the data of physical inspection and experience, the data of competent engineering.[4]

The disposable-funds criterion

One criterion used by the defendants of LIFO is that it results in an income figure more closely reflecting "disposable funds," "cash profits," or "funds flow." Swift and Company defended its inventory reserve policy (a policy closely resembling LIFO) as follows: "What we need and are seeking most of all is *cash profits*, profits that can be paid out in dividends or reinvested in the business. . . ."[5]

LIFO does have the effect of bringing about a closer similarity between the income statement and the statement of funds. It minimizes the difference between opening and closing inventory. By pricing both at the same unit cost, any variation between opening and closing inventory will result primarily from changes in quantity; any change in value that might have resulted from price changes is practically eliminated. Thus LIFO is one step toward eliminating any difference there might be between cost of sales and purchases. The accounting profession has taken one step back toward forcing an identity between the income statement and the source and application of funds statement.

That managerial and investment decisions require information concerning funds is not, however, an argument in favor of confusing the funds statement and the income statement, but rather an argument in favor of using these two statements in conjunction with each other. That LIFO imposes a funds criterion on the income statement is not an argument in favor of employing LIFO, but an argument in favor of scrapping LIFO. Many of the great advances in accounting during the past two centuries have had the effect of more clearly delineating the difference between the funds statement and the income statement. The substitution of the accrual basis for the cash basis was such an advance. Inventory accounting has been one of the developments in this attempt to replace the

[3] Butters, *op. cit.*, Appendix A, pp. 269–299.

[4] William A. Paton, "The Cost Approach to Inventories," *Journal of Accountancy*, October, 1941, p. 302.

[5] *50th Anniversary Year Book* (1935), p. 4. See also Butters, *op. cit.*, p. 130, and McNair and Hersum, *op. cit.*, p. 153.

cash basis by the accrual basis. It replaces the concept of income as the difference between receipts and disbursements by a more refined concept, a concept going beyond the analysis of flows of cash and of near-cash equivalents. To the extent that LIFO eliminates differences in unit cost between opening and closing inventory and thus pushes cost of sales closer to purchases, to the same extent it forces the income statement back toward a statement of source and application of funds. By any standards of accounting progress, the disposable funds criterion for cost flow must be considered a regrettable retrogression.

Stabilization-of-income criterion

An alleged advantage of LIFO is that it tends to stabilize reported income. If the cost of units purchased or produced reflects movements in the sale price, then matching the current figure for purchases against the current figure for sales may indeed have the effect of stabilizing reported income. This supposed advantage has long been understood. A 1924 article on one of LIFO's historical predecessors commends it as follows: " . . . a general adoption of this method, wherever practicable, will to some extent offset the effects of the business cycle by stabilizing profits and losses over a period of years. . . ."[6]

This "stabilization" argument does not deny that LIFO departs from cost incurred. On the contrary, it argues that once cost flow has been determined in accordance with some other criterion, a *departure* from this flow is warranted because of the stabilizing effects it will have on reported income.

While the merits of stabilizing reported income are not at issue here, it may be pointed out that the Committee on Accounting Procedure of the American Institute of Accountants has stated: "An important objective of income presentation should be the avoidance of any practice that leads to income equalization."[7] As Professor Charles A. Bliss wrote:

> If transfers of computed profit from one year to another are socially desirable on the grounds that greater economic stability would result, then the approach might better be direct than oblique. What is needed is better understanding of the nature of the profit estimate and the treacherous assumptions that are made in order to get estimates for the short run.[8]

The conservatism criterion

Sometimes the argument proceeds on the assumption that conservatism is desirable. This approach requires that inventory be carried at the lowest figure that can be justified.

During a period of rising prices, LIFO would satisfy this criterion. Inventory would be carried on the balance sheet far below current cost. Similarly, income over this period would be reported at a substantially lower figure than if FIFO were adopted. The question that always arises with regard to conservatism is whether income should be stated as accurately as possible or should be understated. In the case of LIFO during a period of rapidly rising prices and substantial inventory carryovers, conservatism has been carried to an extreme.

If a great decline in prices should occur so that the LIFO figure for inventory was significantly higher than the current cost of similar purchases of inventory, then LIFO would be just the opposite of conservative. The reaction to this possibility has been to urge the adoption of "last-in first-out or market, whichever lower." This inventory-pricing formula has been caricatured as "highest-in first-out" or HIFO.

[6] H. T. Warshow, "Inventory Valuation and the Business Cycle," *Harvard Business Review*, Vol. III (1924), p. 27.

[7] *Accounting Research Bulletin No. 43, Restatement and Revision of Accounting Research Bulletins* (New York: American Institute of Accountants, 1953), p. 59.

[8] "The Reality of Inventory Profits," *Harvard Business Review*, September, 1948, p. 542.

Inflation-Suppression criterion

A great number of accountants employ LIFO as a correction for changes in the general level of prices. The following quotation affords a good example of the view that LIFO may be used to remove the distortions resulting from inflation or deflation:

> Some accountants argue that the merchant has made a real profit if he can sell the last pair of shoes for more than he paid for it. But if the increased price of the shoes is reasonably indicative of the reduced purchasing power of the dollar generally, that is, unless the merchant can take his $8 and buy more bread and meat, and clothes with it than he could at the beginning of the year, it is hard to see how he is better off than he was before.[9]

Doubtless, this argument has been the principal one urged in favor of LIFO. It is quite apparent, however, that those who present this argument have failed to make the distinction between changes in the *structure* of prices and changes in the *level* of prices. When, as in the argument accompanying the above quotation, they urge the merits of LIFO, they are talking about an adjustment for changes in the prices of the specific units of inventory—that is, a price *structure* adjustment. But to justify this adjustment by referring to "... the reduced purchasing power of the dollar generally," and to the ability to "... buy more bread and meat and clothes" is surely fallacious. The use of LIFO relates only to the costs of the specific items carried in the firm's inventories, and there is no reason to suppose that these prices will reflect changes in the purchasing power of the dollar. The price *level* problem cannot be used to support the price *structure* approach. LIFO is an appropriate consideration to bear in mind when considering changes in the *structure* of prices. It has no relevance to the problems of changes in the *level* of prices, which require adjustments by an index of the general level of prices.

LIFO can be considered appropriate to these problems only to the extent that the prices of the particular goods purchased by the firm coincided with changes in the over-all level of prices. Such a coincidence would hardly be expected for any extended period of time; even if it did occur (perhaps in the application of LIFO to retail inventories), the question would arise why such an indirect and haphazard expedient was adopted when the more direct and certain method of common-dollar accounting was available. Furthermore, the common-dollar approach differs from the LIFO approach in that it would not require any departure from cost incurred but merely a restatement of cost incurred in terms of a new unit of account.

The unrealized-profits criterion

Sometimes LIFO is defended on the ground that the difference in value between the identical quantities of opening and closing inventory—the so-called "inventory profit"—has not been "realized." One statement of this argument follows:

> The policy of our income tax has always been to levy on *realized* income. Clearly there has been an accretion to wealth when a stock of goods on hand at the beginning of a year doubles in value; so also is there when a building or a share of stock doubles in value. Yet the government refrains from taxing capital gains until the assets are sold or exchanged, and the income derived from holding them *realized*. Thus the question is reduced to 'when is the income from a base stock inventory realized?' ... The advocates of the base stock principle contend that no income is realized until a portion of the basic inventory is finally liquidated.[10]

The defect of this "realization" argument is that, far from giving a criterion for determining cost flows, it is applicable only

[9] Samuel J. Broad, "The Impact of Rising Prices Upon Accounting Procedures," *Journal of Accountancy*, July, 1948, pp. 12–13.

[10] "Base Stock Inventories and Federal Income Taxation," *Harvard Law Review* (1938), pp. 1439–1440.

if a LIFO cost flow is assumed. To say that "clearly there has been an accretion to wealth when a stock of goods on hand at the beginning of a year doubles in value" is to *assume* that the cost of closing inventory is the same as the cost of the opening inventory. Such an assertion tells us nothing except that the LIFO cost flow has been *assumed*. If, on the other hand, one were to assume FIFO, then this same physical inventory would represent a greater investment—a greater amount of cost incurred rather than a "doubling in value."

Current cost criterion

Many a defense of LIFO hinges about the terms "current cost" or "replacement cost." Current cost is defended as reflecting the price that *would* have to be paid *if* current sales *were* met out of current purchases. It may be noted that the whole tenor of this approach implies a departure from cost incurred. This departure is most evident on the income statement where

LIFO results in replacement cost rather than cost incurred being charged against revenue

True, an attempt is made to deny that replacement cost is a departure from cost incurred by putting a meaningless figure on the balance sheet so that the total of replacement cost on the income statement and the meaningless figure on the balance sheet will equal the figure for cost incurred of goods available for sale. But, if this pretense is acceptable, then any figure whatsoever may appear on the income statement; all that is necessary is to put a sufficiently meaningless figure on the balance sheet and argue that the total of the figures on the income statement and the balance sheet is cost incurred. Thus a figure far exceeding any cost that has ever been incurred could appear on the income statement for Cost of Sales provided a negative figure for inventory appeared on the balance sheet so that the two figures added to the amount of cost incurred. While a negative figure for inventory sounds absurd—how can inventory cost less than nothing at all?—it will be apparent in a few pages that the Internal Revenue Code implies just such a negative figure in certain cases. Even if LIFO is not carried to the point where a negative figure appears on the balance sheet, the vast majority of applications of LIFO do tolerate a figure for LIFO that is meaningless by any reasonable standards. The figure may, of course, be the cost incurred for merchandise twenty years in the past. Such a figure for cost incurred may be interesting to historians. To businessmen it is meaningless. On the income statement, the LIFO figure for Cost of Sales is current or replacement cost. Is there any point in arguing that it is really cost incurred because that replacement cost can be added to a meaningless figure to give cost incurred?

RESTORING THE SIGNIFICANCE OF THE BALANCE SHEET

The meaningless figure for inventory that appears on the balance sheet is by no means an essential part of the LIFO technique. It is not necessary to carry inventory at the cost at which similar items of inventory had been purchased several years in the past. Both balance sheet and income statement may be shown at "current cost." The entry required to produce this effect would debit inventory thus increasing the balance-sheet figure for inventory to its current-cost equivalent. The credit would have to appear in the net worth section of the balance sheet.[11]

It would be expected that the proponents of LIFO would welcome any attempt to restore the significance of the balance

[11] H. T. McAnly, "The Case for LIFO," *Journal of Accountancy*, June, 1954, pp. 694–700. Before 1954, the Internal Revenue Service required that, if LIFO was used for tax purposes, it must also be used for general reporting purposes on both income statement *and balance sheet*.

sheet. They have so long lauded "current cost" that it is surprising they have tolerated a figure for inventory on the balance sheet that could have only antiquarian interest. Furthermore, since the defendants of LIFO have often argued that the balance sheet is relatively unimportant compared to the income statement (seldom pointing out that LIFO has been one of the reasons for the decline in the usefulness of the balance sheet), and since the entry bringing LIFO inventory into conformity with "current cost" can be effected completely on the balance sheet without in any way changing the income statement, they have little reson to object to such effects on the balance sheet, and no reason to fear the consequences on the income statement. The fact is, however, that few corporations present LIFO inventory at current cost. Few bestow the alleged benefits of "current cost" on the balance sheet as well as on the income statement. Even the parenthetic or footnote presentation of current cost of LIFO inventories, representing as it does a first step in the direction of substituting current cost for past cost, has found little favor.

Reluctance to reveal the "current cost" of LIFO inventory is understandable. If both the cost of sales figure on the income statement and the inventory figure on the balance sheet were stated at "current cost," their total could no longer, by any stretch of the imagination, be defended as cost incurred. Such a technique could be named "last-in first-out and still-in," or LIFOSI, and would clearly disclose the essential departure from cost incurred that LIFO implies!

INVENTORY LIQUIDATION

The departure from cost incurred, however well it may be disguised when inventory is maintained, becomes much more apparent when inventory is liquidated. For purposes of illustration, the determination

EXHIBIT II

CALCULATION OF COST OF SALES IF INVENTORY IS LIQUIDATED

	Method of Inventory Pricing	
	Fifo	*Lifo*
Opening inventory (2 units)	$1,000	$ 200
Purchases (6 units)	4,500	4,500
Available for sale (8 units)	$5,500	$4,700
Less: Closing inventory (0 units)	—	—
Cost of sales	$5,500	$4,700

of cost of sales in the preceding example is presented in Exhibit II on the assumption that there are no units left in closing inventory. The LIFO computation of cost of sales in Exhibit II is necessary if any attempt is to be made to maintain the fiction that LIFO does not depart from cost incurred. But note how the figure for cost of sales differs from the whole spirit of LIFO! If cost of sales is to measure replacement cost it would have to be $6,000 (eight units at $750). Instead it is only $4,700 and is even less than the cost of sales figure that would result from the application of FIFO. If the arguments about inflation, inventory profits, unrealized gains, replacement cost, etc., that have been advanced by the proponents of LIFO have any merit, then surely the LIFO formula breaks down in this case of liquidation of inventories. If LIFO is to maintain even the appearance of adhering to cost incurred, then it is necessary to discard all the alleged benefits concerning replacement cost, elimination of inventory profits, and so on, that its defenders have always urged in its favor.

During World War II and the postwar period, the problem of inventory liquidation became of great importance. It was particularly important in the field of taxation. The use of LIFO in the computation of taxable income had been sanctioned in 1938, and the law had been further liberalized in 1939. Many of the firms adopting

LIFO found that with war and postwar shortages any limitation to cost incurred would completely reverse any of the hoped-for tax benefits that had induced them to adopt LIFO. They were faced with two possibilities. They could maintain the cost incurred fiction by allowing profit figures to reflect substantial differences between selling prices and the low cost of inventories purchased several years previously. Or they could scrap the cost incurred fiction by lobbying for a computation of taxable income that gave cognizance to replacement cost on the income statement even in a period of inventory liquidation.

The second possibility was chosen. The result was legislation permitting a subsequent revision of taxable income to take account of the difference between the *cost of eventually replacing the liquidated inventory* and the LIFO cost at which the liquidated inventory had been carried. In terms of the LIFO computation in Exhibit II, if the $200 of inventory that was liquidated during the period were subsequently replaced at a cost of $1,500, the new inventory would be valued at $200, and the taxable income of the year of liquidation would be revised by $1,300. The figure for cost of sales in the year of liquidation would be increased from $4,700 to $6,000, and the figure for taxable income would be correspondingly reduced by $1,300. The revision of taxable income for the year of liquidation could be made only if the liquidation and the replenishment occurred within certain time limits and if the liquidation could be termed "involuntary" in the sense that it occurred because of inability to replenish supplies due to circumstances related to war and defense shortages. The method has been dubbed "next-in first-out" or NIFO.

The same sort of problem may arise for inventory liquidation and replenishment for much shorter periods. Thus inventory might be depleted in the first week or two of the month and replenished in the last couple of weeks in the month. This intra-period depletion of inventory would not, however, raise any special problems for the defendants of LIFO if inventory was valued on the "periodic" basis. The usual applications of LIFO would take no cognizance of this depletion of inventory and the current or replacement cost of goods sold would continue to appear on the income statement. It is much more difficult to conceal the departure from cost incurred where replenishment does not occur until some later period so that the end of an accounting period, say the annual accounting period, intervenes between depletion and replenishment. In this case, for the year of depletion, it is necessary to "borrow" some of the cost that has not yet been incurred.

The manner in which the revision of the taxable income of the year of liquidation is made hides to some extent the departure from cost incurred. While the revised figure for net income provides for deductions of costs that had not been incurred prior to the date of liquidation, the revision is not made until after a cost of replacement has been incurred. Furthermore, by aggregating the income statement for the year of liquidation and the subsequent years to date of replenishment, an income statement results that does not disclose the departure from cost incurred. The overstatement of cost incurred in the year of liquidation is offset by the understatement of inventory in the year of replacement.

The most difficult problems of income determination, of course, arise *not* for the determination of income over a period of years, but rather for the determination of income for an annual or shorter period. For these shorter periods, the departure from cost incurred that is implied by NIFO becomes apparent.

The computation of cost of sales for the inventory liquidation example is shown in

EXHIBIT III

CALCULATION OF COST OF SALES IN ACCORDANCE WITH INVOLUNTARY LIQUIDATION PROVISIONS OF TAX LAW

		NIFO	
	FIFO	*Cost Not Yet Incurred*	*Inventory Negative*
Opening inventory....	$1,000	$ 200	$ 200
Purchases..........	4,500	4,500	4,500
Cost not yet incurred.		1,500	
Available for sale.....	$5,500	$6,200	$4,700
Less: Closing inventory (0 units)....	—	200	(1,300)
Cost of sales.........	$5,500	$6,000	$6,000

( ) Negative figure. When deducted it becomes positive.

Exhibit III. In the first column, the FIFO calculation previously presented in Exhibit II is repeated. In the other two columns, two variants of the "next-in first-out" or NIFO method are presented in place of the LIFO calculation in Exhibit II.

One version appears in the column headed "Cost Not Yet Incurred." It constitutes a frank admission of the departure from cost incurred. The cost of goods subsequently purchased for the purpose of replenishing inventory is included with the cost of goods available for sale. The closing inventory of zero units is given a cost of $200. This closing inventory might be called "Inventory to be subsequently replaced and assigned a hypothetical cost."[12]

Another version of NIFO appears in the column entitled "Inventory Negative." Costs not yet incurred are not shown explicitly, but cost of sales are priced at these not yet incurred costs and closing inventory is determined by subtracting cost of sales from the cost of goods available for sale. The cost of closing inventory will be negative. In the illustration employed in Exhibit III, the cost of the closing inventory of zero units is $1,300 less than nothing at all. Note that the total of the cost of sales and of closing inventory still equals what the proponents of LIFO defend as the cost incurred of goods available for sale. The same device by which LIFO appears to adhere to cost incurred is also employed; namely, the departure from cost in the cost of sales figure is obscured by combining that cost of sales figure with a meaningless inventory figure to arrive at a total that is defended as being cost incurred.

[12] A possibly preferable method would be to show "Cost not yet incurred" of $1,300 and "Closing inventory" of $0. Consistency between balance sheet and income statement might, however, require that if the not yet incurred costs that are assigned to the income statement are shown, the not yet incurred costs that are to be assigned to the balance sheet should also be shown.

DEPRECIABLE ASSET ACCOUNTING

Similar accounting problems arise for depreciable assets. During the rapid upward spiral of prices that began in 1946, a number of firms based depreciation charges on replacement cost. The accounting profession looked askance on this patent departure from cost incurred. Consequently, depreciation on replacement cost fell into desuetude, and in its place a policy of accelerated amortization was adopted. Accelerated amortization, to the extent it could ***not*** be supported by such considerations as the rapid economic obsolescence of facilities built for special wartime or defense purposes, represented as complete a departure from cost incurred as did depreciation on replacement cost.

The accounting profession has often articulated its opposition to an ***obvious*** departure from cost incurred. Thus, in ***Accounting Research Bulletin No. 33, Depreciation and High Costs*** (December, 1947), the Committee on Accounting Procedure of the American Institute of Accountants stated:

> The Committee disapproves immediate write-downs of plant cost by charges against current income in amounts believed to represent excessive or abnormal cost occasioned by current price levels. However, the Committee calls attention to

the fact that plants expected to have less than normal useful life can properly be depreciated on a systematic basis related to economic usefulness.

The first sentence rejects a departure from cost incurred by any such means as depreciation on replacement cost. Perhaps the second sentence could be construed as suggesting that the same income statement effects could be obtained if the policy were instead considered to be one of accelerated amortization.

Public accountants generally qualified their certificates of the firms that adopted depreciation on replacement cost in their 1947 annual reports. In the face of this hostility, most of these companies switched to accelerated amortization in succeeding years. But it was adopted under circumstances strongly suggesting that "accelerated amortization" was merely a euphemism for "depreciation on replacement cost." Thus, some companies adopting accelerated amortization in 1948 did not bother to adjust the reported income of previous years that had been computed in accordance with depreciation on replacement cost. (Examples are Allied Chemical and Dye Corporation and E. I. duPont de Nemours and Company.) Other companies switching to accelerated amortization in 1948 found that no adjustment of previous years' reported incomes was necessary because, by a colossal coincidence, the retroactive application of accelerated amortization would have resulted in exactly the same charges against income as the depreciation on replacement cost that had been charged. (Examples are National Steel Company, Republic Steel Company, and Timken Roller Bearing Company.) When U. S. Steel applied accelerated amortization retoactively, it found that the $26,000,000 of depreciation on replacement cost that had been charged in 1947 was insufficient and that a further reduction of $2,675,094 in the reported income of 1947 was necessary to bring it into conformity with accelerated amortization. This ten per cent increase in the previous year's depreciation charge might be regarded as a ***submission*** to generally accepted accounting principles; it might also be interpreted as a ***defiance*** of generally accepted accounting principles.

It may seem strange to assert that accelerated amortization may achieve exactly the same income statement charges for depreciation that would result from the use of depreciation on replacement cost. After all, is not accelerated amortization limited to cost incurred? And does not depreciation on replacement cost use replacement cost instead of cost incurred? Nevertheless, in certain circumstances, circumstances that are surely not too rare in practice, it will be found that a policy called accelerated amortization can be used to achieve exactly the same effect on the income statement as depreciation on replacement cost.

Depreciation on original cost, depreciation on replacement cost, and accelerated amortization are presented for a simple illustration in Exhibit IV. It is assumed that in each of three years a company buys an identical piece of equipment. In the first year, the company pays $1,000 for it, in

EXHIBIT IV

CALCULATION OF DEPRECIATION CHARGES FOR HYPOTHETICAL ILLUSTRATION

	Asset Purchased in			*Depreciation*
	1st Year	*2nd Year*	*3rd Year*	*Charges*
Original Cost:	$1,000	$2,000	$3,000	
Depreciation on Original Cost				
1st Year.......	500			$ 500
2nd Year......	500	1,000		1,500
3rd Year......		1,000	1,500	2,500
Depreciation on Replacement Cost		1000?		
1st Year.......	500			500
2nd Year......	500	1,000		2,000
3rd Year......		1,500	1,500	3,000
Accelerated Amortization:				
1st Year.......	500			500
2nd Year......	500	1,500		2,000
3rd Year......		500	2,500	3,000

the second, it pays $2,000, and in the third, $3,000. Each unit of equipment has a life of two years.

If depreciation is based on original cost, and if the straight-line method is employed, the depreciation charge in the first year will be $500. In the second year, the remaining $500 of the original cost of the asset purchased in the first year will be written off, and half, or $1,000, of the cost of the asset purchased in the second year will be written off. The total depreciation charge for the second year may be seen from the last column of Exhibit IV to be $1,500. For the third year, it will be $2,500.

If depreciation is based on replacement cost, the charge for depreciation in the second year will increase from $1,500 in the original cost case to $2,000. The reason for this $500 increase is that the depreciation charge on the remaining life of the asset purchased in the first year will be $1,000 (½ of replacement cost of $2,000) instead of $500 (½ of original cost of $1,000). For the third year, the total depreciation charge will be $3,000 instead of $2,500.

In the final portion of Exhibit IV, the manner in which accelerated amortization may be employed to achieve exactly the same depreciation charge as depreciation on replacement cost is illustrated. Note that for any one year, the total depreciation charge shown in the last column of Exhibit IV is the same no matter whether depreciation on replacement cost or accelerated amortization is utilized. But, *in order to maintain the appearance of adhering to cost incurred*, this depreciation charge is redistributed so that the accumulated depreciation charge for no asset will exceed the original cost of that asset. In the second year, for example, if depreciation had been based on *replacement cost*, the total charge would have been $2,000 of which $1,000 would have applied to the asset that was purchased in the first year and $1,000 against the asset purchased in the second year. But if $1,000 is applied against the asset purchased in the first year, the total write-off of that asset will be $1,500 which is $500 more than the original cost of that asset. Therefore, only $500 of depreciation is applied against that asset in the second year, and $1,500 is applied against the cost of the asset purchased in the second year.

Will this firm be able to continue to get exactly the same income-statement results by the use of accelerated amortization as it could by the use of depreciation on replacement cost? Or will there come a time when the total amount written off will equal original cost so that further "acceleration" would clearly reveal the departure from cost incurred?

As long as the firm continues to replace depreciable assets at the new replacement cost, and as long as it does not let its stock of depreciable assets dwindle, it will be able to obtain the same income-statement results as could be obtained by a policy of basing depreciation on replacement cost. Note the parallel with LIFO! In the LIFO case, the firm could continue to put the replacement cost of the goods sold on the income statement without using a negative figure for closing inventory as long as it did not let inventory deplete and as long as purchases were made in the current period that reflected replacement cost.

The parallel between LIFO and accelerated amortization is not exact. There are generally a great number of units of inventory, and they are therefore dealt with in the accounting process on a group basis. When inventory is taken, each item is counted, but there is generally no attempt to identify each specific item of inventory even though assumptions may be made concerning their identity for purposes of determining cost flow. Furthermore, specific accounts are not set up for the different units of inventory. The case is quite different with depreciable assets. The num-

ber of units of these is generally much less than the number of items in inventory. Each unit may have greater value and will probably have a longer economic life than an individual unit of inventory. Usual bookkeeping practice is to set up a separate account in the property ledgers for the various units of depreciable property. The accounting process *does* rely on specific identification of the units of depreciable assets.

Since each unit of depreciable assets is dealt with on an individual basis in the accounts, there is nothing quite comparable to the flow assumptions that must be made for inventory consumption. There is no question of assuming that the most recently purchased equipment has been completely consumed and the equipment purchased at some earlier date remains in use because each unit of depreciable assets is dealt with separately. Sooner or later, the accumulated depreciation charge on any particular unit of equipment will approach the total cost incurred on that particular unit. For each individual unit of depreciable property, cost incurred will eventually set a limit to the depreciation charges that may be made on that unit.

For the depreciable assets *as a group*, however, cost incurred may never limit depreciation charges in just the same way that it may never limit inventory-consumption charges as computed by LIFO. As long as new units are being purchased at current replacement costs, and as long as the stock of depreciable assets is maintained in the sense that the number of years of economic life for the group of depreciable assets is not allowed to decline, then the depreciation charge may be the same as would have arisen for depreciation on replacement cost without accumulated depreciation exceeding original cost.

Since each individual unit of depreciable property is dealt with on an *individual* basis, the cost incurred limit arises for each of these units at the end of its economic life. For each unit, therefore, the fiction that is adopted for inventories cannot be applied. It is not possible to argue that the more recent purchases are the goods that enter into sales. The best that can be done for each depreciable asset is to argue that its rate of obsolescence or its rate of use is such that the regular depreciation charges must be altered.

For the depreciable assets *as a group*, however, the effect of employing accelerated amortization in the manner outlined above is identical with that of assuming a LIFO cost flow. The method of putting replacement cost on the income statement without admitting the departure from cost is identical: a meaningless balance sheet figure is employed so that the total of the replacement cost that has been charged to income and the balance sheet figure for net depreciable assets is identical with what may be termed cost incurred.

The calculation of the meaningless balance sheet figure is shown in Exhibit V for

EXHIBIT V

BALANCE SHEET FIGURE FOR UNAMORTIZED COST OF DEPRECIABLE ASSETS FOR ACCELERATED AMORTIZATION SECTION OF EXHIBIT IV

	End of 1st Year	*End of 2nd Year*	*End of 3rd Year*
Original Cost..........	$1,000	$3,000	$6,000
Less: Reserve for Replacement................	500	2,500	5,500
Unamortized Cost.......	$ 500	$ 500	$ 500

the accelerated amortization figures in Exhibit IV. The second year may be used as an example. The original cost is the total cost incurred of $3,000 for the purchases of the first and second years. The reserve for depreciation is the total of the $500 depreciation charge in the first year and the $2,000 depreciation charge in the second year. The net cost—the not-yet-amortized cost—is $500 at the end of each of the three years. This unamortized cost closely re-

sembles a LIFO inventory figure. Indeed, were it not for Exhibit IV and the knowledge that depreciable assets are dealt with on an individual basis, one might think that this $500 was the cost of half of the unit purchased in the first year and that the purchases of units in subsequent years had been charged directly to income. (Note that in the replacement cost and accelerated amortization sections of Exhibit IV the annual depreciation charge after the first year is identical with the cost incurred for the new unit purchased! Shades of LIFO!)

For economic or other reasons, of course, it may happen that accelerated amortization truly reflects capital consumption. Thus the certificates of necessity that were issued by the Defense Production Authority to permit accelerated amortization of plants that were built to meet a specialized, wartime market that might last only a few years were apparently based on the belief that the depreciable assets might not be able to produce a marketable service after the emergency period was over.[13] In such circumstances, accelerated amortization reflects the economic facts of life and may usefully be employed for the purpose of amortizing cost.

If, however, some such justification cannot be found for accelerated amortization, it represents as complete a departure from cost incurred as LIFO. If accelerated amortization does not reflect the passing of economic usefulness, then precisely the same considerations arise for depreciable assets as arise for inventories where the LIFO cost assumption cannot be justified by the physical flow of products. If it is permissible to enter the replacement cost of inventories on the income statement by means of LIFO, it should be just as permissible to put there placement cost of depreciable assets on the income statement by means of accelerated amortization. If all taxpayers have the option of using LIFO, then all should be permitted to use accelerated amortization—not just those firms constructing defense facilities.

If a meaningless balance sheet figure may be employed to maintain the fiction that LIFO does not depart from cost incurred, then the same treatment should be acceptable for depreciable asset accounting. If the meaningless LIFO figure is permitted to become negative for tax purposes in the case of involuntary liquidation, a similar treatment should be adopted for depreciable assets by permitting accumulated accelerated depreciation to exceed total original cost.

Conversely, if none of these practices are permissible for depreciable asset accounting, then LIFO should be rejected for inventory accounting. For accounting purposes, the important differences between depreciable assets and inventory are bookkeeping differences. They arise because depreciable assets are dealt with on a unit basis whereas inventory consumption is dealt with on a group basis. Neither LIFO nor accelerated amortization adheres to cost incurred in any meaningful sense. Neither should be accorded a preferential treatment.

CONCLUSIONS

Replacement cost has been widely adopted for accounting purposes. LIFO and accelerated amortization, both recognized for tax purposes, and both blessed by the American Institute of Accountants, are the means by which replacement cost methods are introduced into the income statement. The price of paying lip-service to original cost has been the meaningless balance sheet that resulted.

The proponents of replacement cost have been persuasive salesmen. Once they have got their foot in the door, they have

[13] See Robert Schlaifer, J. Keith Butters, and Pearson Hunt, "Accelerated Amortization," *Harvard Business Review*, May, 1951, p. 113.

invariably succeeded in forcing the door wide open. When LIFO was first adopted in 1938, its uses were carefully circumscribed and the industries in which it might be applied carefully limited. Within a year, it was made available to all taxpayers who could comply with the tax regulations. Each year, these tax regulations have become somewhat easier to meet. The introduction of NIFO during the period of war shortages in World War II, the reintroduction of NIFO during the Korean conflict, the partial "relief" granted to taxpayers during a period of involuntary liquidation *and before replacement* (the 75 per cent rule), the application of LIFO to retail inventories in connection with the retail inventory method, all these are but a few of the examples of the spread of replacement cost in tax circles.

Similarly, once replacement-cost concepts began to leak into depreciation accounting, it became apparent that the flood would follow. At first, accelerated amortization was available only for tax purposes during war. Now it is available during a period of armed neutrality. Formerly, adoption of replacement-cost depreciation required Certificates of Necessity which could be procured only by defense industries. Now, replacement cost depreciation is available to all taxpayers by means of declining-balance depreciation and the sum-of-years-digits method.[14] Whatever gap there was between inventory accounting and depreciable-asset accounting, that gap has been progressively narrowed. Depreciable asset accounting is now completely consistent with inventory accounting. Both are based on replacement cost to the extent that there is any tax or other benefit to be derived from the use of replacement cost.

[14] Robert Eisner has shown that these methods could lead to depreciation charges that were *permanently* above their straight-line counterparts. "Depreciation Under the New Tax Law," *Harvard Business Review*, January, 1955, pp. 66–74. It may similarly be shown that these methods may be used to approximate depreciation on replacement cost.

SOME COMMENTS ON THE STATEMENT OF PLANNING COSTS*

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WHEN the present Committee On Costs And Standards was formed several years ago, the Association charged it with the responsibility for developing a statement of cost concepts without specifying either the objectives or content of that statement. For many reasons development of a statement paralleling those issued by the Association on accounting principles underlying corporate financial statements was abandoned in favor of a more general statement relevant to management purposes.[1] This decision reflected an awareness of the growing importance in accounting of the management viewpoint and the lack of any statement of sufficient general validity to perform for management costing the same functions present statements on accounting principles do for income determination. Rapid developments in recent years in other disciplines have placed a premium upon proper cost constructions. Statistical decision theory, linear programming, mathematical programming, waiting line theory, input-output analysis, and the like all depend upon accounting for cost data relevant to purposes other than income determination. The advent of high speed automatic data processing machines, by virtue of their elimination of many economic and time barriers to enlarged cross-analysis of recorded cost and revenue information, poses new questions on the basic form for recording financial data. Yet, income determination and income determining costs continue to dominate accounting, leading to unthinking use in industry of income costs for purposes for which they were never intended. These, and other factors, made obvious the need for immediate development of a statement of cost concepts for management purposes which would both delineate areas of applicability of income costs and specify forms of cost constructions pertinent to other purposes.

To some, enlargement of the scope of accounting activities as implied in the Statement may represent an unwarranted extension of accounting functions. To this, only one reply is possible; management has need of financial information relevant to purposes other than income determination and the accountant with his knowledge of existing records and the assumptions underlying the data contained therein is in a prime position to evaluate each request and to select or develop the necessary information. If he does not, some other group will, for the need is urgent; and if another group is forced to do so then the industrial accountant will in all likelihood be relegated to a position of financial historian. In the industrial scheme of things there are few positions of lesser importance than that of historian.

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* Portions of this paper were presented at the annual meeting of the American Accounting Association, Seattle, on August 29, 1956.

† Although much of the material contained in this paper has been drawn from Committee discussions, this article represents the writer's own conclusions as to the consensus of group opinion. In the section on "Time and Uncertainty Adjustments" other material developed by Victor H. Brown of The University of Buffalo and the author has been added to that of the committee in order to explain more fully some of the problems involved.

[1] Feeling amongst the Committee at that time was that any statement of costs supplementary to existing statements on accounting principles would of necessity require promulgation of arbitrary rules of cost allocation rather than objective reasoning, for allocation in large measure represents a rationalized division of essentially indivisible costs.

General Approach

Having decided upon the major objective, there remained an array of questions of only slightly lesser magnitude than that already decided. There was the problem of identifying various functions of management and determining wherein in each cost information served important purposes. Furthermore, how could relevant cost concepts be identified, defined, and related one to another in such a way as to form at least the outline of a general theory? To what extent should the Committee strive for universal applicability of this theory? What terms were to be employed and how should they be defined? What should be done about areas where knowledge was found to be deficient? Each question constituted a major problem which had to be resolved in a manner reasonably consistent with the primary objective. In the end, some were settled by actual analysis; but in the main the Statement reflects their resolution on the basis of Committee opinion.

Given the management viewpoint as fundamental, a decision was finally made to adopt as the general framework of the Statement a classification scheme reflecting the principal functions of management for which cost data were required.[2] Two broadly defined functions—planning and control—were identified and each subclassified in accordance with existing views as to subordinate management activities. In this way sharply delineated subordinate functions were set forth where in actuality only shading is to be found.[3] The disadvantages of this became obvious as development of the Statement progressed; but the expounding of theory, at least in this area, appeared to require it.

Development of cost concepts for the different areas required identification of each management function, determination of its objectives, and designation of quantitative measures of sacrifice consistent with it. In doing this work the Committee had the advantage of prior work done in each of the specific fields. Cost constructions resulting from this previous work, however, were for the most part of a highly specific nature, and therefore of limited applicability. Nevertheless, their existence made the task facing the Committee immeasurably easier. All semblance of a general theory of costs, however, was lacking, and this was developed to the extent it has been primarily by synthesis of lesser concepts.

In formulating any theory, there exists the problem of determining the permissible degree of abstraction. Given the objective of developing a general theory, it was obvious that content must be sacrificed for universalness. But, to what degree? The lesser the degree of abstraction the more likely would be understanding and acceptance of the theory in business. On the other hand, sacrifice of validity for acceptance would defeat the primary purpose. A decision was finally made to accept a higher order of abstraction than considerations of immediate acceptance appeared to dictate, but at the same time to push theory no farther than what in the Committee's opinion in each instance represented the limits of practical implementation. This compromise has re-

[2] Another suggested classification scheme was based upon a four part breakdown of the investment-disinvestment cycle—acquisition, utilization, recombination, and disposition. It was rejected because the Committee felt it better fit the narrower area of income determination.

[3] Unfortunately, the English language does not lend itself well to describing varying degrees of possession of a given attribute. Instead, it depends upon dichotomies for description. For example, planning is defined in the statement as the process of recognition, evaluation, and selection between known alternatives; but alternatives may be recognized in many ways, amongst which is awareness of the possibility of striving for something better if the present course of action yields unsatisfactory results. This recognition of the possible existence of unspecified, potentially more advantageous alternatives is one reason why the Committee encountered so much difficulty in reconciling period and project planning.

sulted in some internal inconsistencies particularly in the planning area, and has left the Statement open to criticism both on practical and theoretical grounds.

Use of familiar terms and their common definitions was rejected in the interest of preciseness. Instead, recourse was had to less familiar terms like "value release," "services," "differential cost," and the like because they could be defined precisely without creating any serious misinterpretations. More familiar terms such as "resources," "assets," and "variable costs" carry varying connotations, and this the Committee desired to avoid wherever possible. Addition of new terms to an area where there exists at present a surfeit of terms is unfortunate, but even more so would be double meanings where precision is most desired.

Finally, it was decided to recognize in the Statement those areas where knowledge was inadequate to permit meaningful development of theory, in the hope that by so doing adequate theory would eventually be developed. Several of these areas were encountered in the planning section (e.g., the relationship between period and project planning, time and uncertainty adjustments, and pricing). Each was developed to the limits of Committtee ability.

Classification Of Planning Costs

The classification of subordinate management functions selected for the area of planning (pricing appears to be a special form of project planning) is a common division. The two types—project and period planning—are frequently referred to as captial and operations budgeting, terms reflecting typical accounting treatment of the recorded costs arising therefrom. This classification scheme is probably less than optimum for it does not permit ready reconciliation of cost concepts relevant to the two types of planning. At the time the scheme was adopted, however, it was the only available one which appeared to fit reasonably well the existing facts.[4]

Project planning is defined in the Statement as the type of individualistic planning management does, or should do, when the question at issue involves future commitments of varying term and of sufficient magnitude to warrant special consideration. Use of the term "planning" carries with it presupposition of the existence of more than one recognized alternative course of future action and a need for evaluation to guide decision-making. Conceivably, the alternatives could involve the whole of the business, but it is presumed they ordinarily will affect only part of it. For this reason, a differential rather than total approach is suggested, with reconciliation of the two indicated by a footnote (see Statment footnote 2). Moreover, it is presumed that recognition of the problem and its alternative solutions means that the period of time encompassed by each alternative is capable of estimation. It is conceivable that such a term might be indefinite, but more likely some set number of months or years can be established.[5]

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[4] Since the adoption of this scheme, the author conceived of another which on the surface appears to have promise. This alternate scheme would subdivide planning into planning of prime and subordinate controllable elements. By prime controllable elements is meant those factors the decision upon which is entirely within the control of top management (e.g., volume and mix of production, research expenditures, advertising, new plant or equipment acquisition, replacement on economic grounds, and the like) in contrast to those which are not (e.g., sales) or those which derive from decisions on the prime controllable factors (e.g., inventory, materials requirements, labor, production schedules, and the like). The latter are subordinate since they reflect an ever narrowing degree of possible discretion on the part of subordinate management and increasing effort towards coordination of planned future activities with decisions on prime factors.

[5] Because of the discounting process, indefinite time periods pose a less than an insoluble problem. Depending upon the rate of interest, costs of later years have decreasing importance. Even with indefinite-length projects there exists some number of years, projection beyond which adds nothing of significance to the derived measures.

The more familiar time dichotomy of economics—based upon the concepts of short- and long-run—was found unsuitable for application to specific situations. What was needed was direct estimation of the timing of all service inputs associated with each alternative, and not their classification for descriptive purposes.[6] In spite of these arguments the scheme exhibits faults which are particularly evident where interest rates are low, commitments sizable and of long duration, and uncertainty great.

Recognition of period planning, in contrast to that of project planning, was less of a logical outgrowth of Committee opinion on activities which define the planning process than it was simple acceptance of the facts of what management does. The term is meant to represent the periodic function undertaken by management in order to develop a set of interrelated estimates of future effects upon the business of some planned course of future action.[7] Usually, the projection period is short (frequently being a year, but often less and sometimes more) and the projection itself is based upon the income model. Consequently, estimates developed for period planning are usually expressed as future revenues, future expenses (based upon both past and future historical costs), and future income (in the accounting sense).

Project Planning—General Comments

As indicated above, the Statement contemplates project planning as a form of individual planning where there exist alternative courses of future action of varying time periods involving future commitments of sufficient magnitude to warrant incurrences of the costs of planning. Because a problem and its alternate solutions ordinarily will affect only part of the future activities of a firm, the analytic approach suggested is one of treating the estimated effects of each alternative as a differential (i.e., a measure of difference) from some arbitrarily selected standard of total future activity. It is suggested that this standard be the estimated future results of adoption of a course of action identical to that being pursued at the present time. Although there is no necessity that this alternative serve as the standard, it has the advantage of making more meaningful measures of difference, for the reason that differences are easiest to interpret when they represent departures from present conditions.

Use of a standard of some sort, however, is deemed necessary in order to permit simultaneous comparison of estimates associated with all alternatives. By establishing such a standard, activities common to all alternatives and affected by none can be isolated and ignored. In this way points of difference can be identified, estimated (both in revenue and cost terms), and compared one with another, for all will have been measured from the same point.[8]

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[6] The short- and long-run classifications of economics have as their purpose establishment of a framework within which can be described presumably typical cost behavior, given certain limiting assumptions. For planning, however, what is required is knowledge of the time and quantity of service inputs and the time and quantity of outputs. Given this timing, nothing of advantage is added by classifying certain inputs as short-run and others as long-run costs.

[7] In reconciling period planning with the general concept of planning adopted by the Committee there exists the question of whether or not alternatives are considered in making the basic period estimates. For example, where the volume and mix of sales have been estimated for the coming year and an estimate of production derived from them through the use of inventory and other operational standards, has a selection amongst alternatives taken place? In one sense it may have, for the standards presumably reflect the results of prior decisions which gave consideration to all recognized alternatives, but these decisions were made at a previous time and serve as guides for present development of the operations budget. Is, then, development of the operations budget, in contradistinction to development of the standards, a planning activity?

[8] Not to use a standard means that alternatives must be compared one to another in pairs. This will result in the same conclusions, but poses difficulties in presenting intelligibly the results of such comparisons. Furthermore, it tends to introduce into the calculation

Given the alternatives, what is vital for their evaluation is estimation of differences in anticipated future *cash* flows occasioned by their adoption rather than the standard. This emphasis upon cash (or its equivalent) rather than service utilization may come as a surprise to some. It is explained by the fact that, unlike income determination, project planning assumes a definite life period (that of the project); interest centers entirely upon financial effect over the whole of that period; and only the future outlays, not those of the past, are significant. Since assumptions as to the need for periodic reporting, indefinite life, and use of past dollar outlay costs rather than future value are inapplicable, financial sacrifice is best expressed in terms of what is to be surrendered and what will be received from adopting each alternative. Looked upon in this way, only future cash outputs and inputs are relevant.

the concept of opportunity costs. For example, given alternatives A, B, and C (The alternative presuming continuance of operations as they are at present) and the following differential magnitudes, and using C as the common standard, the analysis would appear:

	A	B	C
Differential revenue.....	$500	$100	$0
Differential cost........	300	150	0
Differential margin.....	$200	($ 50)	$0

Compared individually, the results might be:

	A vs. B		A vs. C	
	A	B	A	C
Differential revenue.......	$400	$0	$500	$0
Differential cost..........	150	0	300	0
Differential margin........	$250	$0	$200	$0

Under the second procedure A is still obviously the best alternative, but its $250 differential margin over B raises problems of interpretation. Of course, what it represents is the net advantage from adoption of A rather than B (including $50 from foregoing the differential loss occasioned by adoption of B rather than C).

To explain this to management is a difficult task, and probably accounts in large measure for lack of use of the opportunity cost concept in business. The suggested approach, however, leaves to management measurement of the opportunity cost of adopting A rather than B by comparing differences in their total margins.

Unfortunately, cash outflows and inflows timed to coincide with service inflows and outflows do not represent the whole of the exchanges involved in many alternatives. Non-cash outputs in the form of promises to pay cash and bartered services take the place of cash outputs for acquired services. Moreover, services on hand at the beginning of a project are committed to it without cash outputs; and services acquired for cash or by other means will be left on hand at termination of the project because they lack sufficient divisibility to permit acquisition of only those required for the undertaking.[9] Costing of each of these non-cash outlays means determination of their cash equivalent at the time of exchange so that all measures can be placed upon a cash flow basis.[10] The task of doing this, and the considerations involved, account for the length and relative complexitity of the project planning section of the Statement.

Another problem recognized only in brief in the Statement is considerations of future sacrifice which are incapable of satisfactory quantification.[11] These may be of equal or greater importance than measures of differential cost and revenue but must of necessity remain subjective considerations of management. They become elements of uncertainty to be weighed together with the actual measures set forth in the Statement after quantita-

[9] Examples of some non-cash outlays might be: (1) the exchange of debentures for a building or equipment; or (2) exchange of one machine for another by trade-in. Services on hand used on the project without requiring a future cash outlay could be buildings, machines, or inventory; while services remaining at the end of the project could be much the same.

[10] Services remaining on hand upon termination of the project have a cash equivalent. Instead of recognizing this cash equivalent as a form of differential revenue, however, the Committee suggests it be considered a reduction of the prior cash outlay which gave rise to these services, adjusted for time differences. (See below for further elaboration).

[11] Many of these deal with the effects of an alternative upon such factors as the present organization structure, employee relations, demands for other products in the line and the like.

tive analysis is completed. A further complicating factor is the extent to which decisions on a project may have implications for future operations beyond the period of the project.[12] In these cases future implications must be taken into account to whatever extent is possible in order to determine cash equivalents.

Determination of Cash Equivalents

Use of the four-part scheme for subclassifying project costs reflects different types of problems encountered in determining cash equivalents for services on hand to be exchanged for services required on the project; services on hand which will be used on the project; and services remaining upon completion of the project. The general procedure advocated is estimation of the value of these services in best alternate use. Alternatives available are: (1) sale as is; or (2) use in lieu of an otherwise necessary acquisition for cash of the same type services. The latter, referred to throughout the Statement as a replacement, relates to possible use of the services on some other project.[13]

"Sale as is," means salvage value as reflected in present estimates of the future selling price of these services less their costs to dispose. The term employed in the statement to describe this measure is ***net proceeds***. Because most businesses are going concerns, however, and in many instances there exist uses for services other than on the project in question, ***replacement value*** is always a consideration. Services may have utility on other projects being planned for execution concurrent with the project in question, or following it. If this is the case these services have an alternate use value on other projects and it should be measured, adjusted for time differences and interim costs, and compared with net proceeds. Cash equivalent, under these conditions, is the higher of net proceeds or adjusted replacement cost.[14] In order to avoid repeating this phrase throughout the Statement it is presumed to be understood that when replacement value is introduced as a consideration replacement usage is feasible and the value of services as a replacement (adjusted for time and interim costs) is in excess of net proceeds. (See Statement footnote 4.)

The date to be selected for calculation of net proceeds or replacement value presents another problem. For example, services on hand planned for use on the project might otherwise have been sold before the project starts, during the project, or after the project is completed, if they were not to be used upon it. Likewise, they might be used on other projects at similar times. Moreover, residual services may be sold or used as a replacement upon completion of the project or sometime thereafter. Conceivably, the selection of different times for estimation of these magnitudes could

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[12] For example, construction of a new building may exhaust available capacity of the central steam heating plant. Immediate expansion of the steam plant is unnecessary, but because the new building will be built expansion will be necessary before another can be constructed. One point of view might be that no differential cost attaches to the present building, but future construction will be charged with the whole of the cost of expanding the heating plant. Taken in another context, however, it might be presumed that management has considered alternate uses of the steam plant, including its use in the future for other buildings, and has decided to employ the present excess capacity for the projected building. This is to say management is willing to employ the capacity rather than withhold it for use in lieu of a future replacement, and that the cash equivalent of the heating plant input for the projected building is a proportionate share of expected future costs of expanding the heating plant after the project period has ended, adjusted for the time differences. The latter represents the Committee's viewpoint.

[13] Use of these services on another project may not be feasible. Under these conditions net proceeds is the only relevant value.

[14] In footnote 4 of the statement, second paragraph, last sentence, reference is made to a condition which sometimes occurs. The only alternative to use of services on the project may be "sale as is." Incurrence of further processing costs might conceivably enhance greatly the sale value of these services. Under these conditions, net proceeds should not exceed what it would otherwise cost to acquire similar services for this type of processing, otherwise, value added in processing would be erroneously assigned to the initial service value rather than processing activities.

give rise to greater or lesser estimated values. This introduces into each calculation an added speculative element; for the most part, however, the Committee chose to ignore it. Instead, it recommended determination of net proceeds at the time of exchange (acquisition) in the case of bartered services; utilization, for services on hand to be used on the project; and end of the period, for residual services. The reasoning behind selection of these particular dates is explained below. For replacement values, however, it was necessary to recognize their measurement at a time significantly removed from the date determination of the cash equivalent should take place. This, in effect, is an implicit acceptance of speculation as to the time of possible alternate replacement use, but in view of the uncertainties surrounding the whole estimation process it was deemed unimportant. The same might have been done for net proceeds by introduction of the phrase "at the time of estimated sale"; this was thought to be an unnecessary complication.

Since alternate use as a replacement may involve significant time delays, the discounting and adjusting of these values for time and interim costs avoided by use of the services on the project was believed a necessary refinement. The dates to which such values should be adjusted were established to coincide with the date a cash outlay (or output, in the case of residual services) would otherwise have taken place were it not for existence of these services. For example, use of services presently on hand for barter avoids the necessity for a cash outlay at the time service inputs are acquired. Discounting of the estimated replacement value of bartered services to the date of acquisition should produce their cash equivalent as of that date. For services on hand which will be used on the project, however, no exchange takes place. Their existence, however, and availability for use on the project avoids the necessity for future acquisition of similar services for the project. It is presumed in the Statement that management would have otherwise acquired similar services at or near the date of planned utilization, and the presence of services on hand has avoided a future cash outlay as of that date.[15] Residual services, on the other hand, are more in the nature of an output of the project and their cash equivalent must be determined as of the date they are available for alternate use. This, obviously, is the end of the project period for services of this sort are acquired in connection with a project mainly because they cannot be separated at the time of acquisition from those to be used upon it.

In addition to discounting the replacement values to the dates recommended it is presumed that they will also be adjusted for interim costs (e.g., storage, maintenance, etc.), if these are significant. Avoidance of these costs, which otherwise would have been incurred if the services were used as a replacement, reduces their replacement value.[16]

Explanation of Measurement Procedure

Exhibit 1 contains four schematic diagrams illustrating recommended procedures for measuring future differential costs. In Case #1 (Acquired and Fully Consumed Services) the primary task is determination of the cash outlays (i.e., (C) in the diagram) accompanying acquisition of service inputs. Because some of these outlays may be in the form of promises to

[15] Frequently, services of this sort would be acquired at one time and used continuously throughout the project. Under these conditions the term utilization should be taken to mean the date these services would otherwise have had to have been acquired (i.e., first utilized) for the project.

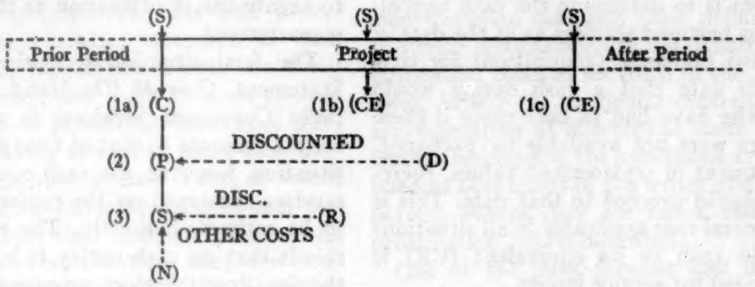
[16] It is also possible that it enhances it. For example, if use of services on hand for a particular project involves a significant holding period, storage costs might be avoided by selling the services now and replacing them later.

pay cash (P) or bartered services (S), the problem of determining their cash equivalents exists. The cash equivalent for a promise to pay cash is the discounted cash payment as of the acquisition date, determined by discounting the payment (D) from the planned date of payment to the acquisition date. Bartered services, how-

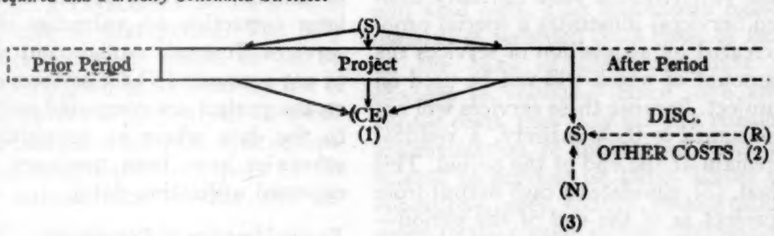
Exhibit 1

Schematic Diagrams Illustrating Measurement of Future Costs of Differential Services

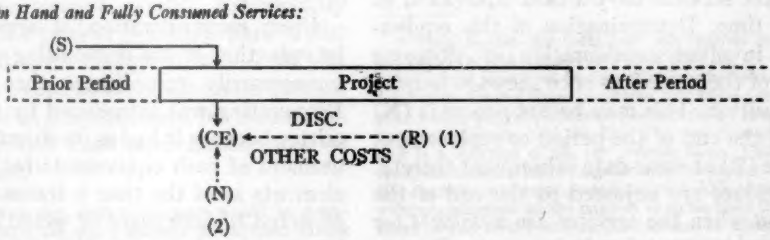
Case #1—Acquired and Fully Consumed Services:



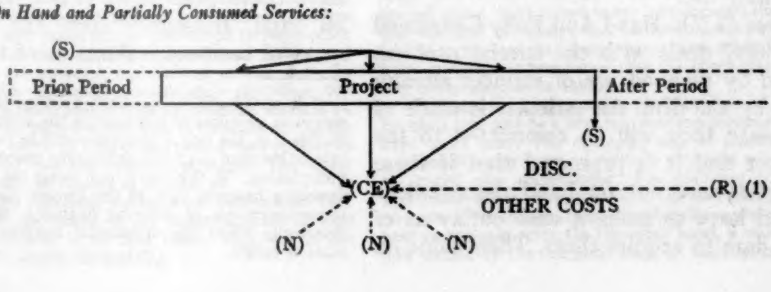
Case #2—Acquired and Partially Consumed Services:



Case #3—On Hand and Fully Consumed Services:



Case #4—On Hand and Partially Consumed Services:



ever, have two possible alternate values—net proceeds or replacement value. As indicated above, it is recommended that net proceeds (N) be determined as of the date of expected barter while replacement value (R) as of the date they would otherwise have been used on another project. No matter what dates are selected, the problem is to determine the cash equivalent for bartered services as of the date of expected exchange (acquisition) for it is on this date that a cash outlay would otherwise have had to take place if these services were not available for exchange. Adjustment of replacement values, therefore, should proceed to that date. This is the general case applicable in all situations wherein cash or its equivalent (CE) is exchanged for service inputs.

Case #2 (Acquired And Partially Consumed Services) illustrates a special problem created by acquisition of services the full amount of which will not be used on the project. Because these services will not be consumed in their entirety, a residual will remain at the end of the period. This residual, (S), simulates a cash output from the project as of the end of the period—i.e., the services have a cash equivalent at that time. Determination of this equivalent involves consideration of alternate uses of these services once they are free for disposition. This may be net proceeds (N) as of the end of the period or replacement value (R) at some date subsequent thereto. All values are adjusted to the end of the period when the services are available for alternate use.

Case #3 (On Hand And Fully Consumed Services) deals with the special problem posed by planned use of services already held by the firm. An estimate is made of the date they will be committed to the project and it is presumed that if these services were not on hand management would have to make a cash outlay as of that date to acquire them. Their value on the project is determined by adjusting their value in alternate use—i.e., net proceeds (N) or replacement value (R)—to that date. The fact that under normal conditions a few weeks or even months might intervene between an otherwise necessary acquisition and its utilization was not deemed of sufficient importance to negate use of utilization as the date of measurement.

The final situation recognized in the Statement, Case #4 (On Hand And Partially Consumed Services) is similar in certain respects to that of Case #2. In this situation, however, the cash equivalent of services consumed on the project (CE) is to be estimated directly. The reason for this is that no cash outlay is involved in the situation; therefore, no over-statement of differential costs occurs necessitating later correction by valuation of residual services. Instead, replacement value (R) or net proceeds (N) for services consumed on the project are computed and adjusted to the date where an acquisition would otherwise have been necessary (i.e., the expected utilization date).

Reconsideration of Procedures

Upon reconsideration, it appears that introduction of the discounting procedure unnecessarily complicates the process.[17] Discounting was introduced by the Committee because it had as its objective measurement of cash equivalents for non-cash elements as of the time a transaction was expected to take place or would otherwise have taken place were it not for services on hand. Insistence upon the measurement of cash equivalents as of the trans-

[17] It would still be necessary to discount cash payments on promises to pay cash to the acquisition date. In this case, the rate of interest would be the borrowing rate rather than one which reflects the uncertainty of the undertaking. If this were not done the method of financing becomes part of the project plan and as a consequence use of different financing methods may drastically affect the differential margins or implicit rates of return.

action date, however, is unrealistic, reflecting more income determination thinking rather than the planning approach. Since the same discount rates will, in all likelihood, be used for these adjustments and the later ones which bring all estimates of future cash outflows to some common point in time for comparison purposes (see section below on time and uncertainty adjustments), measures of cash equivalents for service inputs are being adjusted back and forth through time in the process of measuring differential costs without having any effect upon their ultimate discounted values. Thus, it would seem that for bartered services and services on hand their cash equivalent could be measured at the time they are committed to the project (i.e., the beginning of the project period) and residual services as of the end of that period. The only adjustments necessary would be for interim costs incurred or avoided by use of these services on the project. All discounting would take place after the cash equivalents were determined as a part of the necessary adjustments for time and uncertainty.

This refinement would considerably simplify the project planning part of the Statement even though it would still be necessary to estimate the alternate dates of sale or use as a replacement for those services for which cash equivalents must be determined.[18]

Comparison with Other Cost Concepts

Some interesting and informative results can be obtained by comparing the cost concepts advanced in the Statement with those in common usage for planning purposes, and observing the extent to which they concur and differ. Exhibit 2 is a table containing a list of some of the more common concepts, their definitions, and their relationships to the definition of differential costs as set forth in the Statement. Where the particular concept is an approximation of differential costs under certain conditions, the conditions are outlined as best limits of the writer and space permit. Where they are not a valid approximation, this is indicated.

One of the most popular cost dichotomies in current usage is that of *variable* and *fixed costs*. This breakdown reflects a division of recorded costs (past or future) on the basis of their variability with changes in volume.[19] Since both are recorded costs, they may fail as a reasonable approximation of differential costs when related to services on hand. Under these conditions, only chance consideration is given to their value in best alternate use.[20]

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[18] That is to say, cash equivalents would be determined in much the same manner as outlined in the Statement except that replacement values at the time of expected replacement and net proceeds at the time of expected sale would not be discounted to some other date. Instead, they would be considered differential costs as of the expected replacement or sale date. In Case #4 this approach considerably simplifies the method of measurement of cash equivalents. Services on hand would be valued at the time of commitment to the project (i.e., outset of the project period) and at the end of the period (for the residual services). The latter measure would be treated as in Case #2.

Once these alternate values were determined they could all be discounted to the common point in time where comparison is to take place. This avoids the necessity for double discounting.

[19] Symbolically the total cost relationship may be expressed by the equation: $TC = TC(x_1, x_2, \cdots, x_i)$, where x_1 = independent factors affecting the behavior of total costs. One of these is volume; but there are many others such as price, efficiency, economic lot size, management attitude, and the like. The variation in total cost is a function of all, not volume alone. Failure to recognize this can lead to significantly erroneous results. For example, a company anticipating a 50% increase in volume estimated on the basis of variable costs that the effect of this would be a sizable increase in reported income. The change took place, but reported income remained about what it had been. Investigation disclosed that the shift in volume had led to numerous shifts of jobs by employees. As a consequence labor efficiency had fallen sufficient to compensate for the effect upon total cost of the increase in volume.

[20] When value in alternative use is considered, variable costs may not be a cost for planning purposes while fixed costs may. For example, end of season style merchandise may have no value in alternate use except as special sale merchandise. For planning purposes there is no alternative; therefore, the merchandise has no cost. Nevertheless, these merchandise costs will appear as variable costs. On the other hand, a warehouse now owned by the company may, at least in so far as

Exhibit 2

Relationship of Future Differential Costs to Commonly Used Cost Concepts for Planning Purposes

Name of the Specific Concept	*Definition*[1]	*Relationship to Future Differential Cost*
1. Variable cost.	1. Costs which change in total with changes in the rate of output.	1. A reasonable approximation of future differential costs where factors other than volume exert no significant effect upon the behavior of total future costs and the concept of value in alternate use is either inapplicable or current recorded costs of variable services on hand are roughly equal to their anticipated future replacement costs.
2. Fixed cost.	2. Costs which do not change in total as the rate of output of a concern or process varies.	2. Services may have future differential cost if they possess value in alternate use; otherwise, inapplicable to planning.
3. Opportunity cost.	3. Measurable advantage foregone as the result of the rejection of alternate uses of resources.	3. Synonymous with future differential costs except that the measure of advantage foregone from other alternatives is excluded from the cost calculation and re-introduced in the form of comparative margins.
4. Outlay cost.	4. Financial expenditures recorded in the books of account.[2]	4. An element of future differential cost if representative of future outlays. Does not take account of value in alternate use of services on hand or residual.
5. Out of pocket cost.	5. Costs which with respect to a given decision of management give rise to cash expenditures.	5. Same as future outlay costs.
6. Imputed cost.	6. Costs which do not involve at any time actual cash outlay and which do not, as a consequence, appear in the financial records; nevertheless, such costs involve a foregoing on the part of the persons whose costs are being calculated.	6. Future differential cost
7. Discretionary cost.	7. Costs not essential to accomplishment of a managerial objective.	7. If to be incurred on a project they are future differential costs subject to the same limitations as future outlay costs.
8. Postponable cost.	8. Costs which may be shifted to the future with little or no effect on the efficiency of current operations.	8. Same as discretionary costs.
9. Differential cost.	9. Increases or decreases in total costs, or changes in specific elements of cost, that result from any variation in operations.	9. Synonymous with future differential costs if not based upon recorded costs. Otherwise, a good approximation where value in alternate use is inapplicable or where current recorded cost of differential services on hand is roughly equal to anticipated future replacement cost.
10. Unavoidable cost.	10. Costs which cannot be avoided by a contraction of operations.[2]	10. Services may have future differential cost if they possess value in alternate use; otherwise, not a planning cost.
11. Avoidable cost.	11. Costs which can be avoided by a contraction of operations.[2]	11. Same as recorded differential costs (see #9 above).
2. Sunk cost.	12. Historical costs which are irrecoverable in a given situation.	12. Not a future differential cost; inapplicable to planning.

[1] Except where otherwise noted the definitions set forth have been taken from the "Report of The Committee on Cost Concepts and Standard," Accounting Review, April, 1952.
[2] Joel Dean, *Managerial Economics* (Prentice-Hall: 1951), pp. 259–66.

Assuming a shift in volume is involved in the alternative in question, variable costs may be a reasonable approximation of certain differential costs if it can be presumed that no other factors are operative upon total costs (e.g., price, efficiency, economic lot size, and the like) and that the variable cost represents future cash outlays, or current recorded costs which are a reasonable approximation of future replacement costs.

Another common pairing of costs is *opportunity* and *outlay costs*. The definition of opportunity costs is similar to that used in the Statement for differential costs (in fact, it is identical to that used for the determination of cash equivalents), the difference being that the "measurable advantage foregone" from the next best alternative is implied in the Statement by the use of a standard alternative and simultaneous comparison of the estimates for all other alternatives. Recognition of foregoance as the difference in reported margins, rather than its inclusion amongst the costs of each alternative, is the procedure recommended. Otherwise, the two are the same. Outlay costs, on the other hand, represent cash outlays. To the extent that they are future outlays they represent elements of differential cost, but fail to include consideration of value in best alternate use of services on hand or residual. *Out of pocket costs* refer to future cash outlays and have the same restricted uses for planning as future outlay costs.

recorded depreciation is concerned, be considered a fixed cost not applicable to planning. If it could be rented, however, it has a cost for planning purposes equal to the rent foregone by its use in operations.

Imputed costs represent the value in alternate use of services acquired without past outlay of cash or its equivalent. Although they are not recorded in the books of account for income determination, they are differential costs.

Discretionary and *postponable costs*, terms used to refer to the various degrees of discretion vested in management as to their incurrence, are differential costs if they represent anticipated future cash outlays. Management's decision on their incurrence is the determining factor even though it is discretionary. *Differential costs*, as the term is commonly used, refers to changes in total costs occasioned by some past or future change in operations. This is what the Committee had in mind in recommending the concept. Unfortunately common usage of the term frequently refers to the change in total recorded costs whether or not service inputs will involve future cash outlays or have value in alternate use. This latter consideration can involve significant differences, as indicated in footnote 22. *Unavoidable costs* (and their counterpart, *avoidable costs*) refer to the extent to which present costs (usually considered recorded costs) will decrease with a decline in volume. For purposes of planning, unavoidable costs are ignored, but this may be in error if the services have a value in alternate use. Conversely, avoidable costs which represent recorded costs of services on hand before the reduction in volume may not be a planning cost even though ordinarily considered as such, for it is conceivable that no alternate use for them exists. Finally, *sunk costs* are a form of recorded costs for which there presumably exists no alternate use. For planning purposes they simply are not cost.

In summary, then, except for opportunity and imputed costs the concepts in current use are all limited by the fact that as past or future recorded costs they do not give consideration to value in alternate use. Under many conditions, this may constitute an unimportant limitation, and measures such as variable costs may provide an excellent approximation of future differential costs. On the other hand, value in alternate use may be important and the use of concepts which give no consideration to it can lead to significant distortions. Only the general theory provides reasonable answers to the questions of when to use the various specific cost constructions as useful approximations.

Time and Uncertainty Adjustments

Because of the length of time involved in project planning, differential costs and revenues cannot be summed directly; rather, they must first be adjusted for time and uncertainty. Time adjustments are necessary because every firm has alternate uses for cash. Foregoance of alternate investments in order to commit cash to a given project means foregoance of the probable return cash would bring if alternate investments were made. Moreover, recoupment both of cash committed to any investment and the value of its alternate rate of return is always an uncertainty. The greater the uncertainty, the higher the prospective rate of return required to justify the investment.

Uncertainties attending investments vary from project to project and between alternatives for the same project depending upon economic factors affecting the prospective investments in question.[23] In general, uncertainties relating to a given project and its alternatives stem from a host of independent factors influencing the future course of the general economy (e.g.,

[23] In this article the term "uncertainty," is used rather than "risk." It is an attempt to correct somewhat loose usage of the two terms in the Statement. In precise usage risk refers to the future probability of occurrence of certain events in a sufficiently stable universe to permit statistical prediction. Uncertainty deals with the subjective probability of occurrences when statistical treatment is impossible.

wars, depressions, or changes in government attitudes); the future position of the industry in the economy (e.g., technological changes, or shifts in consumer preferences); the future position of the firm in the industry (e.g., brand preferences, or management abilities); and the specific project in question (e.g., shifts in product demand, prices of inputs, or errors in quantitative estimates of future yields). Estimates of future differential costs and revenues for each alternative are subject to varying possible margins of error because interaction of the above mentioned economic factors may produce unforeseen results. Possibilities of this occurring need to be taken into account in evaluating alternatives.

How all of this is to be done, however, is a problem which was never fully resolved by the Committee. The only real agreement in this respect was that adjustment of any sort must involve the discounting process. One procedure set forth in the Statement involves having management appraise the uncertainties and estimate the alternate value of cash commitments and express an opinion as to the minimum required rate of return on each project in order to make it attractive. This approach, somewhat common in business, has as its principal disadvantage the requirement that management quantify in advance the one measure it is usually most interested in as a resultant of the analytic process. Moreover, no guides for the development of this rate are provided in the Statement for the reason that the Committee was unable to agree upon them.[22] Other recognized limitations of the approach were: (1) that, although the method permits comparisons between alternatives relating to the same project, it makes it difficult to compare results between projects; (2) special, and unrealistic, measures need to be taken in order to permit comparisons between alternatives having different time periods; and (3) the end result of the process is difficult to interpret in any really meaningful sense.[23]

A second approach suggested in the Statement is to exclude from the calculation of rate of return all considerations of uncertainty and alternate uses of cash and leave these for management evaluation when compared to the estimated rate of return implicit in each of the alternatives. Both the first and second approach are illustrated in the simple example presented in Exhibit 3. Upon initial inspection these two methods may appear to be identical (mathematically, they are), but in using the second approach no necessity exists for having management estimate in advance the required rate of return. Rather, implicit rates for all alternatives are calculated, arrayed in comparative fashion, and the task of evaluating them left to management. In doing this management must decide whether or not the differences in rates of return outweigh differences in uncertainties attending each alternative. Advantages of this procedure are: (1) management need not quantify in advance its estimates of uncertainties attending each

[22] In one respect the Committee was in agreement—use of average rates of return computed on the basis of past ratios of reported earnings to average book investment are useless for planning purposes. This is not to say that such rates aren't used, but that they miss the point entirely. What is important is *future* possible rates of return on investments and the *future* cost of capital. Historical rates reflect results of the past, have an upward bias as an investment ages, and are based upon income rather than planning costs.

[23] Results of the comparison are differential margins expressed in present dollars. These represent the present value of future differential revenues over future differential costs. But how does one interpret the difference between a differential margin of $200,000 and one of $350,000 when their initial investments are different and the time periods vary? Furthermore, how can these margins be compared with margins on other projects all competing for the same funds.

Only if the rate of interest employed is the future cost of capital is there real meaning attached to the differential margins. Computation of the future cost of capital, however, is an involved problem requiring above all some decision as to management's position vis-a-vis the stockholder. Are future dividends the future cost of equity capital, or should the measure be total future earnings? No decision was reached on this point.

Exhibit 3

Two Possible Methods of Comparison of Alternative Estimates

Given:

Alternatives	*A*	*B*	*C*
Present investment	$10,000	$20,000	—
Annual differential revenues	$ 6,000	$15,000	—
Annual differential costs	$ 4,000	$10,255	—
Project period	10 yrs.	10 yrs.	10 yrs.

Procedure #1:

Given a rate of interest of 10%, determine present value of differential margins for *A* and *B* and compare:

$$DM_A = (6{,}000 - 4{,}000)\, a_{10/.1} - \$10{,}000 = \$2{,}290$$

$$DM_B = (\$15{,}000 - 10{,}255)\, a_{10/.1} - \$20{,}000 = \$9{,}340$$

Procedure #2:

Determine implicit rates of interest for *A* and *B* and compare:

$$\$10{,}000 = (\$6{,}000 - 4{,}000)\, a_{10/iA} \qquad i_A = 15\%$$

$$\$20{,}000 = (\$15{,}000 - 10{,}255)\, a_{10/iB} \qquad i_B = 20\%$$

alternative but merely decide whether or not differences in estimated rates of return are sufficient to compensate for differences in whatever uncertainties it may foresee (2) it avoids the use of artificially equal time periods in situations wherein alternatives have significantly different time periods; (3) rates of return calculated for the alternatives are not only comparable with one another but with those of other alternatives associated with other projects; and (4) when used as a capital budgeting technique, the method permits ready discernment of the total array of prospective investments and easier cut-off at the future cost of capital.[24] Principal disadvantages of the procedure are: (1) its tendency to yield very high or infinite rates of return when initial investment is low in comparison to future differential costs and revenues; and (2) it is not particularly well-suited for use as an intermediate or low level administrative technique.[25]

As an adjunct procedure for assisting management in the evaluation of uncertainties attending each investment, the use of range estimates has possible advantages. What this consists of is the development for each alternative of several estimates of future costs and revenues in order to express possible variation in future results. Levels selected for this purpose might be: (1) most likely future results; (2) worst possible combination; and (3) the most optimistic. These are merely suggestions; others more pertinent to the particular case could be selected. The advantage of such estimates, accompanied by explanations of the underlying assumptions, is that they help alert management to the relative significance of changes in the underlying factors. Other possible analyses bearing on the problem of evaluating uncertainties are computa-

[24] A problem posed by different time periods is the tendency of management to presume reinvestment at rates equal to those earned on the alternatives in question. If an alternative of short duration will earn 25% while another of much longer term is expected to yield 15%, the two are not directly comparable. The cash throwoffs of both must be adjusted for expected rates of return on reinvestment during the period of the longer investment and their discounted values taken into account in the comparison. Often, the differences occasioned by this factor are insignificant and can be ignored, but there are situations where they cannot.

Another problem is differences in amounts of initial investment. A 25% rate of return on an investment of $200,000 is not directly comparable to a 20% return on $1,000,000. The question remains as to what rate of return which can be earned on the $800,000 difference if the 25% investment is taken. If this is lower than 25% the spread between the rates of return decreases until it becomes zero when the expected rate of return on the $800,000 difference reaches 18.75%. This factor is important when investments are mutually exclusive.

[25] Infinite rates of return on initial investment are possible, for example, under alternatives involving rental of facilities. Evaluation of a rate of this magnitude in view of the attendant uncertainties poses difficult problems. It would seem that other considerations such as the magnitude of possible future losses have more bearing upon the evaluation.

Low level administration requires a cut-off rate rather than comparative analysis. Otherwise, the quantity of possible investments referred to top management would destroy all possibilities of careful evaluation.

tion of pay-off periods and the construction of future cash budgets.[26]

Period Planning

Period planning, in contrast to project planning, is a short-term procedure. Although budgets are sometimes constructed for periods as long as ten years in advance, the usual maximum is one year and frequently it is even shorter. Moreover, period planning is a total enterprise activity; that is, it involves formulation of a set of plans for the entire organization or at least the major subdivisions thereof. Furthermore, it is a summation process wherein individual plans of the sections, departments, plants, divisions, and associated companies are added one to another in turn to produce a final comprehensive summary for the firm as a whole. In addition, the process includes other elements such as coordination, evaluation, and control, all interwoven one with another and with planning in such a manner that separate consideration is made quite difficult.

In certain respects period planning, as a planning process, remains an enigma in so far as the Committee is concerned. The principal reasons for this were: (1) frequent lack of alternatives in the formulation of initial estimates on prime factors (e.g., production, inventories, and the like); (2) the extent to which standards are employed in the process as a guide in the development of subordinate plans; (3) use of the income model as a projection device; and (4) uncertainty as to whether or not development of a coordinated set of plans, their evaluation, and subsequent use as a control instrument was in fact planning. Extensive as the literature is on this subject, none was found which could satisfactorily resolve these questions.

In regard to the lack of alternatives the Committee was perturbed by the apparent fact that much of project planning begins by having management estimate the volume and mix of sales expected in the coming period. Then, production estimates are formulated by use of some form of inventory standards. If the inventory estimates for the coming period are made at this time a selection between alternatives is involved; but if standards reflecting the results of some previous planning are employed, the question remains as to whether or not a choice has occurred. And thus it goes throughout the entire process, sometimes alternatives are considered in the formulation of plans but frequently they are not. In this respect, at least, it appeared that planning and the elaboration of plans based upon established standards go hand in hand.

Use of the income model for period planning is understandable for several reasons. First, the determination of differential costs is an expensive proposition; and even where they are determined it is impossible to sum them to produce differential costs for larger organizational segments.[27] The only financial model now

[26] It may come as a surprise to some to find pay-off period advanced as a method of evaluating uncertainties. Used as the sole criteria, it has many very serious defects. When used in conjunction with implicit rates of return, however, the method adds to understanding of the situation. For example, given two investments with equal implicit rates of return a management might well be inclined to take the one with the shorter pay-off period simply because estimates of the earlier years have a higher assurity of being correct than those of later periods.

Cash budgets are important because rate of return in no way takes account of the cash position. Investments with high prospective rates of return may involve significant cash deficits before realization of future inflows of cash compensate for earlier outflows. Whether or not a firm can handle large initial outflows is determined by the cash budget, not rate of return.

[27] Given the differential costs for each of the subordinate sections of a division of the organization, their summation tends to produce something less than the differential costs of the larger organization segment. The reason for this is that many of the differential costs of the larger organization segment are common to all subordinate sections and for this reason not affected by changes in their activities. For example, differential costs associated with each salesman attached to a given sales branch when summed are less than the differential costs of the branch as a whole. The differential costs associated with the salesmen simply do include in them many of the differential costs of operating the branch office.

available which can be employed for summation purposes is the income model. This is not to say that it is the best conceivable model for this type of planning, but simply that it is as of now the only one available.[28] Another argument supporting use of the income model is that for many future service inputs (e.g., advertising, research, public relations, etc.) management had direct control over the length of commitment time and chooses to make that period synonymous with that of period planning. Services of this type are usually acquired and fully consumed within the period and their estimated income costs are for that reason identical with measures of cost for project planning purposes. This is not always the case, however; for example, research and advertising expenditures are made for services whose useful lives exceed that of the period. Even so, in situations such as these where future uncertainties are so great as to defy satisfactory quantification of future revenues or costs in the project planning sense, the Committee was forced to recognize justification of the procedure as an expedient occasioned by existing limitations upon the possibilities of reasonable measurement.

Reconciliation of the two types of planning in the Statement was further complicated by the fact that period planning involves elements of coordination, evaluation, and control. There is, of course, no reason why short-term budgeting should be exclusively a planning process—in fact, it is known not to be; but the question remains as to the extent to which these other functions can properly be termed planning. Coordination, for example, does involve some selection between alternatives, particularly as regards timing of the separate activities of various organization segments. Where standards are not present to guide determination of the type and volume of various activities, decisions need be made in this respect. In both of these cases an indefinite number of possible combinations of activities may be available and coordination requires selection of a type and timing of combined activity which fits the limits established by higher management decisions.[29] Again, however, there exists the question as to whether or not planning is involved where coordination of plans takes place on the basis of pre-determined standards.

Evaluation refers to the review and assessment by various levels of management of the planned probable financial effect upon the organization, or a major division thereof, which will be occasioned by adoption of the developed plan. Since the final summation of financial effects of combined subordinate plans is couched in future income terms, evaluation implies a reviw of anticipated income and comparison of it to some preconceived standard of income performance. Usually, this is a relative standard of historical origin which expresses results expected by management. If the period plan does not produce the expected income then reanalysis of that plan is initiated. It is at this point that the search for other alternatives is certain to enter the process. The problem is that use of the income model for reanalysis means that alternate plans tend to be tested on this basis. This being the case, there is the risk of making commitments on the basis of an analysis which makes use of income costs when those costs are not necessarily pertinent to the problem of selecting between alternatives. An alternative which produced the highest anticipated income when summed within the income model is not

[28] Some suggestions for possible improvement of the income model to make it more useful as a period planning tool are incorporated in the section of the Statement entitled "Historical Cost Reports For Planning And Control."

[29] Where there exist limited resources and a large number of possible plans for their usage, mathematical techniques such as linear programming may be applicable. If so, the desired cost concepts are future differential costs as best they can be approximated under the given conditions.

always the best of available alternatives.[30] For this reason the Committee felt it necessary to include in the Statement a warning to this effect.

Finally, there is the fact that control, with its subordinate elements of direction, communication, and motivation, are all included in the period planning process. In period planning direction is determined and communicated to lower levels where it acts as a restriction upon formation of subordinate plans. The end result of the entire activity is establishment of a set of plans in the formulation of which each manager has taken part. As a consequence, each has a motivation for achievement of goals he has established for himself.[31]

Inclusion of all these various management functions within the period planning process is not, in itself, a problem. What is, however, is the fact that planning calls for cost concepts different from those used to serve these other functions. When all are included in a single activity, designation of the proper concept of cost for carrying out that activity becomes a confused problem. The present Statement has not succeeded in its solution.

Pricing

Establishment of pricing as a separate category of planning in the Statement does not mean that the Committee believes the concepts of cost applicable to this purpose differ materially from those outlined above for project planning, but rather that pricing entails cost estimation under special sets of circumstances. There are, of course, certain exceptions to the general case when legal aspects dominate the pricing problem (e.g., situations wherein provisions of the Robinson-Patman Act are applicable) or where contracts specify cost-based prices. Under these conditions, determination and use of income costs for pricing is required. By and large, however, situations of this sort are relatively unimportant and their prominence in accounting literature on the subject of pricing is apparently explained by the fact that they offer one of the few opportunities there are for formulating direct relationships between recorded costs and price.

In the main, pricing takes place under conditions where the character of demand and the possibilities of price discrimination between products or markets play an important role.[32] Where this is the case, pricing to maximize future income (or to create the greatest certainty of achieving a given future income) requires varying the margin between cost and price from product to product depending upon the possibilities for discrimination in each case. Determination of the margin in each instance is not an accounting function, for its size depends upon the aforementioned character of demand. What is an accounting function, however, is the determination of product costs which serve as one of the measures determining the margin.

Under certain special, and relatively unimportant conditions, estimation of future product costs for pricing is vastly

[30] Use of income cost concepts in reanalysis of plans has two possibly serious deficiencies: (1) no consideration is given to the time value of money; and (2) value in alternate use for existing services is supplanted by book value. For example, given a choice between two long term contracts, one of which produces a higher average annual income than the other, the one with the higher average annual income may well be chosen when in fact, because of the timing on cash outflows and inflows, it will produce the lower rate of return. When book value is significantly higher or lower than value in alternate use, employment of book value as the basis for measurement of income costs can lead to rejection of business which should be accepted and acceptance of business which should be rejected.

[31] The Committee recognized that all motivation stems from human values and the wants which derive from them. Given wants which the organization is capable of fulfilling, an individual can be motivated by knowledge of the fact that his performance in comparison to budget will determine the degree to which certain of his wants are fulfilled. See Control section of Statement.

[32] No value judgment is implied by use in this text of the term "discrimination." The term is employed here to indicate differences in the factors affecting demand which permit securing of higher margins of price over differential product costs in some instances.

simplified by the fact that a prospective sale will take place under conditions where the price established will have no effect upon future revenues. This type of sale, termed non-repetitive in the Statement, involves pricing a product which is to be sold to a customer in the near future. Costs applicable in this situation are the immediate future differential costs which might otherwise be avoided if the sale does not take place.[33] Because of the shortness of the time period involved and restriction of the pricing problem to one prospective sale, cost finding under these conditions is greatly simplified; but the costs as determined establish only a lower limit for price. Determination of the margin remains a management function.

More common is the situation where a product is produced to be sold to much the same customers over an indefinite future period of time. Here, future differential costs involve considerations such as the future costs of replacing productive facilities. These costs, however, should remain *future differential costs of the product* (i.e., those future costs which could be avoided over time if the product were not manufactured) rather than some form of a long-run average cost. Otherwise, product costing represents unconscious delegation by management to the accountant of the responsibility for determining a significant portion of the margin between product costs and price.[34] It is the function of management, not of the accountant, to determine what effects present adoption of a particular price, or price structure, is likely to have upon future revenue from product sales.

While the Committee recognized the extent of present use of average product costs for pricing purposes, it felt it could not logically support this practice unless it was being employed as an administrative procedure leading to pricing on a basis which reflects a prior management decision as to what constitutes a competitive margin of price over differential product costs.[35] Moreover, the Committee recognized that average product costs are a strategic tool if competitors base their prices upon their average costs. Although these costs are likely to vary from firm to firm for a host of reasons, a firm's average product costs usually constitute a good point of departure for estimating those of its competitors. Neither of these uses of average product costs, however, was felt to be directly involved in product cost finding for pricing purposes; therefore, both were omitted from the Statement.

Conclusion

When contrasted with the original objectives of the Committee, the present

[33] Where there exists excess capacity for which there is no alternate use during the period required to manufacture the product, future differential costs are likely to be quite low. On the other hand, where there are alternate uses for available capacity and these must be foregone if the sale in question should take place, future differential costs of the product should take account of the margin foregone by not producing the other products. By estimating future differential costs of each product competing for the available capacity without including in the costs of each measures of alternate margins foregone, and having management approach the entire pricing problem for all competing products as a comparative one, it is possible to determine which combination of prices will produce the greatest margin from present use of limited capacities. Even in cases of this sort, however, there exists the further problem of what higher margin might be realized by withholding available capacity from present production and using it to fill "tomorrow's" orders. No form of costing will answer this problem; only management can make the necessary estimates.

[34] Determination of any portion of the margin between differential product costs and price by resort to some arbitrary form of average cost allocation means the substitution of rationalized service flows intended for inventory costing and income determination for estimates of the degree of possible price discrimination between products. The argument that average costing is at least objective appears to be one favoring the substitution of objective irrelevancies for subjective estimates.

[35] A common pricing practice on job work is to compute material and labor costs and add to both a fixed percentage of one or both in order to determine the price. Assuming material and labor costs reflect current replacement prices, determination of the percentage to be added is a management function. Once such a margin has been determined by considerations of competition, it can be expressed in percentage terms for use by personnel of the business to make pricing decisions in accord with previously formulated management policy.

Statement represents something less than what initially had been desired. Although the Statement as it now stands contains the outline of a general theory of costs for management purposes, much appears to be lacking. This is particularly true of the planning section where the lack of full reconciliation of period and project planning, meaningful elaboration on time and uncertainty adjustments, and positive recommendations on cost determination for pricing under varying market conditions have all contributed to its limitations. In addition, it is entirely possible that the theory of costs for project planning has been made unnecessarily complex by inclusion of the discounting procedure in statements regarding methods of measurement of costs under varying conditions. Moreover, the theory may at times have been pressed beyond the areas of practical implementation. If so, this will become obvious as more work is done in the area.

On the other hand, it is felt that the omissions, which for the most part reflect unsolved problems, are more than offset by the results achieved. Advancement and development of the future cash flow concept of differential costs for project planning serves to point out sharp differences between cost concepts applicable to project planning and those of income determination. Moreover, it is possible to do a reasonably satisfactory job of reconciling this concept with the more limited concepts of costs for planning now in common use, and in so doing to develop a better understanding of the uses and limitations of the common concepts as working approximations of planning costs. Furthermore in spite of its obvious limitations the section on time and uncertainty adjustments contains one positive recommendation. Future differential costs must be discounted to a common point in time before alternatives can be compared, and the rate of interest used in so doing should reflect the alternate rate foregone, not the borrowing rate. Finally, for pricing, the cost applicable is the future differential product cost, not average product cost as measured for income determination.

It must be granted that these are limited contributions and many may well be controversial. If the only result of the Statement is to stimulate interest in the area of costing for management purposes by creating controversy on the points raised in the Statement, then one purpose of the Committee has been accomplished. It is hoped, however, that more than this will result for the Committee believes that the concepts it has advanced have important applications where management planning is involved.

LIST OF RESEARCH PROJECTS IN ACCOUNTING: 1955-1956

RALPH L. BOYD
Director of Research

THE 1955–1956 list of research projects is the seventh such list published in recent years.[1] The annual figures for completed graduate student projects reported to the Director of Research in recent years are:

Year	*Master's Essays Completed*	*Doctor's Dissertations Completed*
1950–1951	Not available	10
1951–1952	145	18
1952–1953	154	28
1953–1954	147	18
1954–1955	138	21
1955–1956	153	23

Master's theses are reported only if completed. All doctoral dissertations and faculty research projects either in progress or completed during the period are listed.

Abstracts of many of the doctoral dissertations listed here will appear in subsequent issues of THE ACCOUNTING REVIEW. Copies of doctoral dissertations and master's essays can be secured in many cases on interlibrary loan from the library of the school where they were submitted. Where copies cannot be withdrawn, university or school libraries can usually supply photostatic copies or microfilm reproductions at reasonable costs.

The subjects classification used for previous published lists of research projects is continued in this listing. Each project is listed only under one classification, although several might well be classified under two or more headings.

SUBJECT CLASSIFICATION

I. THEORY OF ACCOUNTING
   A. Income Determination
   B. Price Level Changes
   C. Inventory Pricing and Valuation
   D. Fixed Asset Valuation and Depreciation
   E. Intangibles
   F. Investments
   G. Current and Fixed Liabilities
   H. Income Distribution
   I. Capital Stock and Surplus
   J. Partnership Problems
   K. Other
II. HISTORY OF ACCOUNTING
   A. Development of Accounting
   B. History of Particular Firms or Industries
III. REPORTS AND STATEMENTS
   A. Financial Statements-General
   B. Consolidated Statements
   C. Analysis of Statements
   D. Other
IV. PUBLIC ACCOUNTING
   A. Auditing
   B. Profession of Accounting
   C. C.P.A. Examinations
   D. Selection of Personnel
   E. Other
V. ACCOUNTING FOR INDUSTRIAL, MERCANTILE AND FINANCIAL ENTERPRISES
   A. Accounting Systems
   B. Budgeting
   C. Cost Accounting—Manufacturing
   D. Cost Accounting—Distribution
   E. Controlership and Managerial Accounting
   F. Internal Auditing
   G. Case and Industry Studies
   H. Machine Methods
   I. Other
VI. ACCOUNTING FOR NON-PROFIT ENTERPRISES
   A. Governmental Accounting
   B. Institutional Accounting
   C. Fiduciary Accounting
VII. LEGAL AND GOVERNMENTAL ASPECTS OF ACCOUNTING
   A. Taxation
   B. Regulation
   C. Contracts and Contract Renegotiation
   D. Other
VIII. REORGANIZATION AND LIQUIDATION
   A. Insolvencies and Bankruptcies

[1] The earlier lists appeared in the July 1951, January 1952, April 1953, April 1954, April 1955, and April 1956 issues of THE ACCOUNTING REVIEW.

B. Capital Readjustments and Reorganizations
IX. Education
X. Miscellaneous

I. THEORY OF ACCOUNTING

A. INCOME DETERMINATION

Doctors

Capital Maintenance and Its Implication in Income Determination, Ben L. Forbes, *University of Illinois*, (In Progress)

Concepts of Income, an Examination and Evaluation, George H. Sorter, *University of Chicago*, (In Progress)

The Concept of "Operations" and Its Influence in Income Determination and Income Theory, Suthee Singhasaneh, *University of Illinois*, (In Progress)

Economic Concepts of Income and Profit and Their Relation to Accounting Theory, Rudolph Schattke, *University of Illinois*, (In Progress)

The Nature of the Business Enterprise and Its Implication in Accounting Theory, Helmi M. Nammer, *University of Illinois*, (In Progress)

Periodicity and the Provision for Federal Income Tax, Paul Walgenbach, *University of Illinois*, (In Progress)

Relevance to Income Determination of Product and Period Analyses of Enterprise Activities, William J. Schrader, *University of Washington*, (In Progress)

Masters

Accelerated Depreciation, Mervin J. Simoneaux, *Louisiana State University*, 1956

The Concept of After Costs and Its Implications for the Determination of Income, Tommy Lee Parish, *University of Illinois*, 1956

A Definition of Cost, Louis Larsen, *University of Pennsylvania*, 1956

The Developed Standards of Income and Revenue Recognition in Federal Income Tax and General Accounting Theory, Robert F. Olberding, *University of Nebraska*, 1956

The Service Concept of Assets, Raymond McGarvey, *University of Illinois*, 1956

B. PRICE LEVEL CHANGES

Doctors

An Evaluation of the Alternative Concepts for Measurement of Business Income, Richard C. MacAllister, *University of Florida*, (In Progress)

An Evaluation of the Usefulness and Limitations of Accounting Data Adjusted for Price Level Changes, Henry M. Steele, *Indiana University*, (In Progress)

The Significance of the Effect of Price Level Fluctuations on Accounting Data, Bernard F. Aschbacher, *University of Illinois*, (In Progress)

Masters

Comparative Evaluation of Present and Proposed Units of Accounts, Barbara Louise Alm, *University of Washington*, 1956

An Evaluation of a Method of Adjusting Accounting Data to Reflect Changes in the General Price Level, Robert H. Church, *University of Oregon*, 1956

Financial Statements and Changing Price Levels, Robert F. Ceisler, *University of Pennsylvania*, 1956

C. INVENTORY PRICING AND VALUATION

Doctors

An Analysis of Current Theory and Practice Regarding the Elements of Cost Included in Inventory by Manufacturers, Robert J. Smith, *Indiana University*, (In Progress)

Masters

Accounting Control of Inventory for the Foreign Market, William P. Ryan, *College of the City of New York*, 1956

An Adaptation of the Last-in, First-out Method of Inventory Valuation to Army Stock Funds, Wilburt Leslie Elliott, *University of Alabama*, 1956

Some Aspects of the Embodiment of Statistical Techniques in Auditing and Accounting Test Checks with Three Applications, John M. Compton, *University of Alabama*, 1956

D. FIXED ASSET VALUATION AND DEPRECIATION

Doctors

Accelerated Amortization as an Incentive for Expansion of Emergency Facilities in the Defense Economy, David A. Thomas, *University of Michigan*, 1956

A Case Analysis of External Accounting Influence Over Managerial Decisions, Richard L. Smith, *Harvard University*, 1956

Concepts of Depreciation and Their Implications in Accounting Theory and Practice. Phayom Bharilai, *University of Illinois*, (In Progress)

Leaseholds—Their Disclosure and Financial Consequence, Roy E. Tuttle, *University of Minnesota*, (In Progress)

A Simplified Reconciliation of Economic and Ac-

counting Determinants of Depreciation Cost, Charles E. Silliland, Jr., *Washington University*, 1956

Masters

Depreciation of New Assets, Raymond L. Woodall, Jr., *University of Pennsylvania*, 1956

Problems of Accounting for Costs of Finding and Developing Crude Oil Reserves, James Herbert, *University of Nebraska*, 1956

Some Aspects of Depreciation for Financial and Tax Accounting Purposes, John Ross Lundgren, *University of Utah*, 1956

The Use of the Reserve Method for Building Maintenance Accounting, Kenneth Leroy Thurston, *University of Utah*, 1956

The Valuation of Fixed Assets, Henry Skopp, *College of the City of New York*, 1957

E. INTANGIBLES

Masters

Accounting for Intangibles in Promotional Corporations, Thomas W. Moss, *University of Texas*, 1957

Accounting for Research and Development Expenses, George F. Tucker, *University of California*, 1956

An Analysis of Current Accounting and Tax Treatment of Research and Development Expenditures, Jerry H. Kaplan, *University of Pennsylvania*, 1956

H. INCOME DISTRIBUTION

Masters

Accounting Aspects of Profit Distribution in Profit Sharing Plans, Gerald John Pagliero, *University of Illinois*, 1956

Accounting for Modern-Day Pensions, Joseph Henry Cowen, *Southern Methodist University*, 1956

A Study of Corporate Dividends, William C. Bausman, *Pennsylvania State University*, 1954

I. CAPITAL STOCK AND SURPLUS

Doctors

The Effect of the Concept of the Corporation on Accounting, Robert T. Sprouse, *University of Minnesota*, 1956

A Study of the Factors Influencing the Accounting Concept of Surplus, Billie L. Barnes, *University of Illinois*, (In Progress)

Masters

Accounting Theory and Practice for Corporate Treasury Stock, Melvin Hal Weinberg, *Southern Methodist University*, 1956

An Examination of the Problems of Terminology and Calculation of Capital Stock Book Value, Lewis Sadler Loftis, *University of Alabama*, 1956

K. OTHER

Doctors

An Analysis of Annual Reports of Selected Industrial Corporations for Compliance with Certain Criteria of ARB #43, Edgar Ben Yager, *Indiana University*, (In Progress)

An Analysis of Annual Reports of Selected Industrial Corporations for Compliance with Certain Pronouncements of the American Institute of Accountants, L. Vann Seawell, *Indiana University*, (In Progress)

The Concept of Disclosure on Financial Statements, Delbert E. Williamson, *Stanford University*, (In Progress)

A Critique of Financial Accounting: Its Limitations and Potential, Lyle E. Jacobsen, *University of Illinois*, (In Progress)

An Evaluation of Accounting Methodology as an Accentuating Factor in Business Fluctuations, Delmas Dennis Ray, *University of Florida*, 1956

The Going Concern Concept in Accounting, Dorsey W. Wiseman, *University of Illinois*, (In Progress)

Return on Investment—A Measure of Performance, Edward J. Blakely, Jr., *University of Texas*, (In Progress)

Masters

Accounting Aspects of Corporate Combinations, Norman Q. Pearlstein, *College of the City of New York*, 1956

Accounting for Growth Industries, Warren W. McDowell, *Temple University*, 1955

Accounting for Pension Plans, John R. Quinlan, *University of Washington*, 1955

Application of American Institute of Accountants Pronouncements to Practices and Procedures of the New York State Insurance Department Regulations, Arnold Smith, *College of the City of New York*, 1957

The Concept of Full Disclosure, Lloyd A. Levitin, *University of Pennsylvania*, 1956

Foreign Exchange Accounting for Assets Held Directly and Through Subsidiaries, Earnest Guthman, *College of the City of New York*, 1957

The Legal and Practical Problems of Stock Options as Incentive Compensations, Edward J. McGinley, *University of Pennsylvania*, 1956

Significance and Measurement of Rate of Return on Investment, Clifford T. Piontkowski, *Temple University*, 1956

II. HISTORY OF ACCOUNTING

A. DEVELOPMENT OF ACCOUNTING

Doctors

Development of American Accounting Thought, 1875–1925, Brother Patrick Hance, S.M., *Catholic University of America*, (In Progress)

Masters

The History of Bookkeeping and Accounting in the 1900's, Samuel P. Shope, *University of Pennsylvania*, 1956

Influence of the Securities and Exchange Commission upon Accounting Principles and Procedures, Morton S. Kaplan, *Long Island University*, 1956

Methodology of Accounting Technique in the U.S.S.R., Nicholas N. Preobrajensky, *University of California*, 1956

B. HISTORY OF PARTICULAR FIRMS OR INDUSTRIES

Masters

Principle Factors Influencing the Development of Public Accounting, Jack J. Richison, *University of Illinois*, 1956

III. REPORTS AND STATEMENTS

A. FINANCIAL STATEMENTS—GENERAL

Doctors

A Study of Notes to Financial Statements in Corporate Annual Reports, Thomas Secoy, *University of Illinois*, (In Progress)

Masters

The Effect and Importance of Qualifications and Disclosures in Reports by Certified Public Accountants, Marvin S. Chanko, *College of the City of New York*, 1957

Financial Statements for Credit Purposes, Ronald Vinegar Kaplan, *College of the City of New York*, 1956

The Presentation of Financial Statements for the Central Valley Project of California—Its Implications with Respect to Generally Accepted Accounting Principles, Robert J. Runser, *University of California*, 1956

Recent Trends in Forms and Terminology of Published Corporate Financial Statements, Abdel Mohamond Abdel-Moneim, *University of Illinois*, 1956

B. CONSOLIDATED STATEMENTS

Doctors

A Critical Analysis of Contemporary Accounting Thought on Consolidated Reports, Rodger E. Karrenbrock, *University of Illinois*, 1956

C. ANALYSIS OF STATEMENTS

Doctors

An Empirical Test of the Acceleration Principle. A Study of the Relationship Between Gross Property and Sales, Paul S. Anderson, *University of Minnesota*, 1956

Masters

An Application of Accounting Techniques of Analysis to the Cotton Textile Industry, Joseph E. Kling, *University of Pennsylvania*, 1956

An Appraisal of Ownership Equity Accounting Methods from the Standpoint of the Financial Analyst, Rollin J. Fry, Jr., *University of Pennsylvania*, 1956

A Study of the Public Accountant's Report for Credit Purposes, Marvin Stein, *College of the City of New York*, 1957

Faculty Research

Minnesota Resort Profits, Reuel I. Lund, *University of Minnesota*, 1956

D. OTHER

Doctors

A Reformulation of the Funds Statement, Howard M. Daniels, *University of Texas*, (In Progress)

The Statement of Application of Funds in Modern Corporate Accounting Practice, Jack J. Kempner, *Ohio State University*, 1956

Masters

Corporate Financial Statements in Germany Contrasted with American Practice, Hellfried Peter Holzer, *University of Illinois*, 1956

IV. PUBLIC ACCOUNTING

A. AUDITING

Doctors

Auditing Standards, the Law and Third Parties, Roland F. Salmonson, *University of Michigan*, 1956

Legal Liability of Public Accountants, R. Glen Berryman, *University of Illinois*, (In Progress)

Masters

Applicability of Sampling Procedures to the Audit of Cash Balances, Gene Norvel Voslow, *University of Illinois*, 1956

A Comparison of English and American Auditing According to the Latest Editions of Dicksee and Montgomery, James H. Turner, Jr., *University of Alabama*, 1955

A Critical Analysis of the Auditor's Report, Morton B. Solomon, *University of Pennsylvania*, 1956

An Examination of the Auditor's Position with Respect to Expressing an Opinion on Cash-Basis Statements, Dane Charles, *Ohio State University*, 1956

Influence of the Securities and Exchange Commission on Auditing, Raleigh W. Weaver, *University of Pennsylvania*, 1956

Mechanized Accounting and its Effect on Auditing, John M. Rubino, *University of California*, 1956

Payroll Auditing by the State Insurance Fund—Problems and Procedures, Beatrice Green, *College of the City of New York*, 1956

The Problem of Seasonal Variation in the Independent Audit Firm—Proposals to Alleviate the Year End Deluge in Auditing with the Aim of Providing More Level Operations, Donald B. Wolchek, *University of Pennsylvania*, 1956

A Study of School District Audits in California, Harold E. Bauman, *University of California*, 1955

B. PROFESSION OF ACCOUNTING

Doctors

A Comparative Study of Certain Accounting Institutions and Practices in England and the United States, Brother LaLalle Woelfel, *University of Texas*, (In Progress)

Comparison of Accountancy with the Legal, Architectural and Medical Professions in the United States, William E. Wright, *University of Texas*, 1956

Masters

The Accounting Profession in Foreign Countries, Sanford Suchow, *College of the City of New York*, 1956

A Comparison of the Profession of Accountancy with Architecture, Engineering, Law and Medicine, Jack Stednitz, *University of California*, 1956

Faculty Research

Case Studies of Motivation and Education for Public Accounting, Harry Simons, *University of California*, (In Progress)

Survey of the Profession of Public Accounting in California, A. B. Carson, *University of California*, (In Progress)

E. OTHER

Masters

The Administration of a Public Accounting Office and Its Problems, Solomon J. Taub, *College of the City of New York*, 1957

V. ACCOUNTING FOR INDUSTRIAL, MERCANTILE AND FINANCIAL ENTERPRISES

A. ACCOUNTING SYSTEMS

Masters

Accounting for a Local Retail Drugstore Chain: A Case Study, Thomas Hal Dodson, Jr., *University of Texas*, 1956

An Accounting System for a Wholesale Distributor of Automotive Parts and Accessories, Jay Albert Hirsch, *Pennsylvania State University*, 1956

Detection and Prevention of Accounting Frauds, Sydney E. Hammill, *University of California*, 1956

How Management Can Best Utilize the Informal Organization in Business, Charles E. Woods, *Golden Gate College*, 1953

The Problems of Internal Control in a Public Utility. The Pacific Telephone and Telegraph Company, Mary Heeney, *University of California*, 1956

Selected Home Office Accounting Systems, Methods, and Procedures Used by Stock Fire and Casualty Insurance Companies, Paul J. Ellenburg, *University of Texas*, 1956

A Study of Whole Dollar Accounting, Dario Joseph Simonetti, *Golden Gate College*, 1952

Unit Accounting for Small Business, W. Stanley Davis, *Golden Gate College*, 1953

B. BUDGETING

Doctors

Cost Accounting and Budgeting Problems in Aircraft Manufacturing, Richmond O. Bennett, *University of Texas*, (In Progress)

A Study of the Use and Limitations of Budgetary Control Systems for Marketing, Joseph W. Newman, *Harvard University*, (In Progress)

A Survey of Planning and Control Practices Employed by Leading American Companies with

Special Emphasis on Budgeting, Sord, *University of Texas*, (In Progress)

Masters

Budgeting for Small Business, Eugene Rawson Clay, *University of Utah*, 1956

Methods and Sources of Information for Forecasting Sales, Albert W. Noa, *College of the City of New York*, 1956

C. COST ACCOUNTING-MANUFACTURING

Doctors

An Appraisal of Direct Costing, Carl Dennler, Jr., *University of Wisconsin*, (In Progress)

Cost Accounting for the Mining, Milling and Smelting of Copper Ores, Kemper W. Merriam, *University of Texas*, (In Progress)

An Inquiry into Some of the Cost Determination Problems of the Forest-Products Industries of Arkansas, Nolen Eugene Williams, *University of Texas*, (In Progress)

Overhead Costs of Products—Accounting and Managerial Viewpoints, R. Lee Brummet, *University of Michigan*, 1956

Standards and Incentives in Preventive Maintenance, Clark E. Myers, *Harvard University*, 1956

Masters

Accounting and Tax Implications of Guaranteed Annual Wage Plans, Theodore H. Preiser, *College of the City of New York*, 1956

Budgetary Control, Standard Costing and Their Relationship in Selected Industries, Frederic Hein, *College of the City of New York*, 1956

A Comparison and Critique of Variance Analyses, John James Emmerling, Jr., *University of Alabama*, 1956

Cost Problems of the Up-Right Scaffold Company, William L. Holmquist, *University of California*, 1956

Is a Cost Accounting System Necessary in the Slip Cover Industry? Jane Stone Horn, *University of Pennsylvania*, 1956

A Study of Cost Principles Applied in the Determination of Costs of Defense Contracts, John E. Cooper, *Louisiana State University*, 1956

A Supervisory Incentive Plan in Conjunction with Standard Costs, Robert Dowd Jessen, *University of Utah*, 1956

Faculty Research

The Development of Costs for the Management of Railroad Passenger Service, Dwight R. Ladd, *Harvard University*, (In Progress)

Electric Energy in the Pacific Northwest—Comparative Costs of Production, Kenneth B. Berg, *University of Washington*, (In Progress)

D. COST ACCOUNTING-DISTRIBUTION

Masters

Statutory and Administrative Laws—Their Effects on Distribution Cost Accounting, Robert Wayne Meherg, *University of Alabama*, 1956

Faculty Research

Airline Price Policy, Paul W. Cherington, *Harvard University*, (In Progress)

Cost of Unloading and Elevating Wheat at Terminal Grain Elevators in the Pacific Northwest, Kenneth B. Berg, *University of Washington*, 1956

Other

Citrus Cost Studies, James W. DaVault, *University of Florida*, 1956

E. CONTROLLERSHIP AND MANAGERIAL ACCOUNTING

Doctors

The Guaranteed Annual Wage and Accounting for Decision-Making, Robert R. Jaedicke, *University of Minnesota*, (In Progress)

Long Term Leases: A Case Study, Roy Tuttle, *University of Minnesota*, (In Progress)

Use of Bayes Decision Theory in Quality Control, Arthur Schleifer, *Harvard University*, (In Progress)

Masters

Accounting as an Aid to Management in Production Policy-Making, George W. Keller, Jr., *University of Pennsylvania*, 1956

Accounting for Industrial Research and Development Costs, John August Cook, *Long Island University*, 1956

Break-Even Analyses—Their Development and Uses, Francis J. McGurr, *Ohio State University*, 1955

The Control of Small Tool Inventories, David P. Wilton, *University of Pennsylvania*, 1956

The Controller as a Staff Member of the Top Management Group, Audrey D. Maybee, *University of Washington*, 1956

Controllership Functions in the Air Force Compared to Those in Industry, Kerwin O. Butler, *University of California*, 1956

Cost Implications of the Guaranteed Annual Wage, Robert Sturwold, *Ohio State University*, 1956

Guaranteed Annual Wage and the Controller, Albert C. Bente, *Hofstra College*, 1957

Principles and Procedures of Maintenance Cost Control, Rezeau J. Rosecky, *University of Pennsylvania*, 1956

Responsibility Accounting, William W. Bolen, *Ohio State University*, 1955

Faculty Research

Decision Models in Accounting, Paul Kircher, *University of California*, (In Progress)

Management Control in Airframe Subcontracting, Neil E. Harlan, *Harvard University*, 1956

F. INTERNAL AUDITING

Masters

Auditing Time and Material Subcontracts Under a Government Prime Contract, Jesse A. Schramech, *University of Tulsa*, 1956

Internal Audit of a Branch Bank, Timothy S. Tse, *University of California*, 1956

Relationship Between the Audit Program of the Public Accountant and the System of Internal Control of the Client, Jerome Brown, *College of the City of New York*, 1957

G. CASE AND INDUSTRY STUDIES

Doctors

Accounting Problems in the Motor Freight Industry, Gerald Wentworth, *Stanford University*, (In Progress)

Accounting Problems of the Tennessee Valley Authority, Vern H. Vincent, *University of Michigan*, 1956

Some Manifestations of the Importance of the Provisions of the Federal Income Tax on Generally Accepted Accounting Practices, Peter A. Firmin, *University of Michigan*, 1957

Masters

Accounting for Natural Gas Production, Jerry Leigh Gibson, *Southern Methodist Univerisity*, 1956

Accounting for the Ownership in Oil and Gas Properties, Ben H. Ahrens, *University of Tulsa*, 1956

Allocation of District Expense and Administrative Overhead to Joint Venture Leases, Beecher Norris, *University of Tulsa*, 1956

An Analysis of the Financial Policy of the American Telephone and Telegraph Company, Earl Hugh Richmond, *University of Washington*, 1956

An Analysis of Problems Incident to Cooperative Accounting, Eugene Cecil Kartchner, *University of Utah*, 1956

Case Study of the Accounting Procedure of the Trust Department of Central Trust of China, Robert Loh, *University of Alabama*, 1956

The Effect of the Depreciation Provision of the 1954 Tax Law on Selected Seattle Manufacturers, Contractors and Machinery Distributors, Harold B. Camandona, *University of Washington*, 1955

An Evaluation and Survey of Cost Accounting Practices in Thirty-seven Selected Cotton Textile Firms, Sylvan H. Sack, *Pennsylvania State University*, 1956

The Flow of Funds in the Chemical Industry from 1944 Through 1953, Michael L. Weissman, *University of Pennsylvania*, 1956

Income Recognition and Cost Accounting for Large Tract-Home Builders, Robert Winkenbach, *University of California*, 1956

Internal Accounting Problems in the Chain Store Industry, Paul Kwasnick, *College of the City of New York*, 1957

Stock Brockerage Accounting, Theodore A. Martin, *University of California*, 1956

A Study of the Instructions for the Uniform Classification of Expenses of Fire and Marine and Casualty and Surety Insurers, John Hollenback, *University of Washington*, 1956

Faculty Research

Accounting for Producers of Oil and Gas, C. Audry Smith, *The University of Texas*, (In Progress)

Operating Results of Department and Specialty Stores in 1955, Malcolm P. McNair and David Carson, *Harvard University*, 1956

Operating Results of Food Chains in 1955, Wilbur B. England, *Harvard University*, 1956

The Role of Air Freight in Physical Distribution, Howard T. Lewis, James W. Culliton, Jack D. Steele, *Harvard University*, 1956

Self-Service in Variety Stores, Lawrence R. Robinson and Eleanor G. May, *Harvard University*, 1956

H. MACHINE METHODS

Doctors

Approach to Electronic Data Processing for Business, Edward A. Wallace, *University of Chicago*, (In Progress)

The Commercial Application of Electronic Data Processing Equipment, Richard F. Peirce, *University of Illinois*, (In Progress)

Study of Order-Processing Functions—Data Processing in Business, John P. McNerney, *Harvard University*, (In Progress)

Masters

The Effect on the Practice of Accounting of the Use of Electronics and Mechanical Devices, William J. Lester, *University of Florida*, 1955

Survey of EDP Procedures with Emphasis on an Underlying Approach to Pre-Installation Analysis and Training of Personnel, Robert T. Tussing, *University of Texas*, 1956

Faculty Research

Company Investigations of Automatic Data Processing, Peter Laubach, *Harvard University*, (In Progress)

I. OTHER

Doctors

Effects of Accelerated Depreciation on Business Decisions, Dale S. Harwood, Jr., *University of Washington*, (In Progress)

The Usefulness of Various Kinds of Fixed Costs Information for Selected Managerial and Other Purposes, Gordon E. Bell, *University of Florida*, (In Progress)

An Analysis of Cost Accounting as a Tool of Management for Nondepartmentalized Banks, Charles A. Winans, *University of Pennsylvania*, 1956

Preparation of Financial Statements from Farm and Livestock Records, John S. Almeida, *University of Florida*, 1955

The Rationale of Statistical Quality Control, Wayne A. Arthur, *Golden Gate College*, 1955

The Role of the Accountant in Resolving Industrial Disputes (1947–1956) Stewart V. Veale, *University of Pennsylvania*, 1956

VI. ACCOUNTING FOR NON-PROFIT ENTERPRISES

A. GOVERNMENTAL ACCOUNTING

Doctors

An Application of Generally Accepted Principles of Governmental Accounting and Auditing to the Counties of Georgia, Homer A. Black, *University of Michigan*, 1956

A Study of the Control of Federal Expenditures, Panas Simasathien, *University of Illinois*, (In Progress)

Masters

Accounting for Non-Profit Summer Camps, Benjamin Cohen, *College of the City of New York*, 1956

Accounting System and Procedure for Municipal Courts of the State of California, Charles Matthew Otter, *Golden Gate College*, 1953

An Analytical Study of Budgetary Control Through Accounting Techniques in Selected Countries—With Emphasis on Liberia, P. Ernest Parker, *University of Pennsylvania*, 1956

Budgeting and Accounting Under the Navy Industrial Fund—A Study of Budgeting and Accounting at the San Francisco Naval Shipyard, Charles E. Louie, *University of California*, 1955

The Comprehensive Audit: A Type of Audit Performed by the General Accounting Office, John R. Moore, *University of California*, 1955

Cost and Pricing Problems of Negotiated Contracts, Llewellyn G. Walters, *Golden Gate College*, 1954

A Critical Analysis of the Proposed Military Pay System for Personnel of the U. S. Army, John L. Ray, *University of Pennsylvania*, 1956

Depreciation Accounting in Relation to the United States Air Force Financial Control System, Leon Feldt, *University of Pennsylvania*, 1956

The Modernization Program of Military Inventory Accounting, Roy T. Omundson, *University of Pennsylvania*, 1956

State Requirements for the Preparation and Execution of Budgets for Connecticut Towns, James D. Foreman, *University of Pennsylvania*, 1956

B. INSTITUTIONAL ACCOUNTING

Doctors

Control Problems of Smaller Colleges and Universities Doing Contract Research, C. Russell DeBurlo, Jr., *Harvard University*, (In Progress)

Masters

Accounting on the Conference Level of the Methodist Church, Jack L. Theis, *University of California*, 1956

The Allocation of Indirect Overhead in Hotel Accounting, Harold Gurman, *University of Pennsylvania*, 1956

Cost Accounting for a State Mental Hospital: A General Outline of a Cost Accounting System for Napa State Hospital, Mike G. Azcona, Jr., *University of California*, 1955

Financial Statements for Hospital Management, Paul S. Gilbert, *University of Pennsylvania*, 1956

Fund Accounting for State Correctional Industries, William R. Anderson, *University of California*, 1956

Selected Aspects of the Accounting System and Controls of Stillman College, Freddie Lee Perdue, *University of Alabama*, 1955

Some Problems in Hospital Accounting, Stanley Jackson, *College of the City of New York,* 1956

The Use of Accounting in the Administration of the United Fund and its Member Agencies in Knoxville, Tennessee, Bobby J. Young, *The University of Tennessee,* 1956

VII. LEGAL AND GOVERNMENTAL ASPECTS OF ACCOUNTING

A. TAXATION

Doctors

The Conflict Between Law and Administrative Practice in Valuation of Property for Taxation in Kentucky, Francis J. Shannon, *University of Kentucky,* 1956

The Impact of Federal Income Taxes on Residential Real Estate Developers, Donald E. Roark, *Indiana University,* (In Progress)

A Study of Certain Differences Between the Accounting and Tax Determination of Business Income, David R. Dilley, *Indiana University,* 1956

A Study of the Use Being Made of Liberalized Depreciation Methods Under the 1954 Revenue Code, Leo A. Poland, *Indiana University,* (In Progress)

Third Structure Taxes; Applicability for Kentucky, Lewis C. Bell, *University of Kentucky,* (In Progress)

Masters

Accountants Influence on Corporate Policies and Operations Through Tax Planning, William Van Fossan, *University of Illinois,* 1956

The Accountant's Place in Tax Practice, Sheldon M. Blazar, *University of Pennsylvania,* 1956

The Accounting and Taxation Problems of Restaurants, Leon Cheskin, *College of the City of New York,* 1956

Accounting and Tax Problems of Corporations Dealing with Treasury Stock, Harold I. Nagorsky, *College of the City of New York,* 1956

Apportionment of Income by Corporate Taxpayers Operating in More Than One State, Frederick Marcus, *University of Pennsylvania,* 1956

Corporations Used to Minimize Tax on Shareholders, Edwin A. Kellerher, *College of the City of New York,* 1956

Depreciation and the 1954 Internal Revenue Code, Elbridge Omar Hurlbut, *University of Maryland,* 1956

An Evaluation of the New Depreciation Method Authorized by 1954 Internal Revenue Code, Charles Jack Andrews, *University of Illinois,* 1956

Federal Income Tax Fraud, Nathan M. Stern, *College of the City of New York,* 1956

Federal Income Tax Problems in Reorganizations, Howard H. Weston, *College of the City of New York,* 1956

A History of the Estate Tax in the United States, Paul M. Wilner, *Long Island University,* 1956

Income Tax Problems of the Petroleum and Natural Gas Industries, Milton Breit, *College of the City of New York,* 1957

Liberalized Depreciation Policies and Their Effects on Business and the Businessman, Dale L. Kiefer, *University of Cincinnati,* 1957

Life Insurance and Annuities and the Tax Laws, Milton Reiss, *College of the City of New York,* 1957

Problems of Tax Treatment of Foreign Income With Special Consideration to the United States—Netherlands Tax Treaty, Edgar J. Braun, *University of California,* 1955

The Sales Tax, John P. Bailo, *College of the City of New York,* 1957

Section 631 (a) of the Internal Revenue Code of 1954 and Its Practical Application for the Timber Owner—Manufacturer, *University of California,* Donald Brinkerhoff, 1956

Special Treatment of Gain in a Corporate Liquidation Within the Environment of an "Open Transaction" under the 1954 Federal Internal Revenue Code, Marvin N. Nathan, *University of California,* 1955

A Study of Non-Business Deductions Under the Federal Income Tax Laws, William Freeman Shaw, *Pennsylvania State University,* 1956

Tax Accounting for Companies Reporting Income Under the Completed Contract Basis, George D. Sage, *College of the City of New York,* 1957

Tax Problems of the Collapsible Corporations, John H. Rosenthal, *University of Pennsylvania,* 1956

Tax Savings Aspects of Charitable Contributions, Edward K. Willis, III, *University of Pennsylvania,* 1956

B. REGULATION

Doctors

Cash Working Capital Requirements in Regulated Companies, Jack H. Matthews, *Indiana University,* (In Progress)

The Influence of the Securities and Exchange Commission on the Practice of Auditing, William E. Whittington, *University of Illinois,* (In Progress)

A Study of the Influence of the Securities and Exchange Commission on the Development of Accounting, Charlton G. Schoeffher, *University of Illinois*, (In Progress)

Masters

A Comparative Study of Certain Aspects of the United States Securities Exchange Act of 1934 and the British Companies Act 1948, Martin E. Simons, *University of Illinois*, 1956

Conversion of a Life Insurance Company's Annual Statement to the Financial Statements of S.E.C., Albert P. McKinney, *University of Texas*, 1956

Influence of the S. E. C. upon selected Principles and Practices in Accounting, Bryce B. Orton, *University of Oregon*, 1956

C. CONTRACTS AND CONTRACT RENEGOTIATION

Masters

Allocation of Institutional Overhead to Government Contracts, Merle F. Lundberg, *University of California*, 1955

Auditing Fixed-Price Government Contracts with Price-Redetermination Clauses, Adolph O. Nicholai, *University of California*, 1956

Defense Contract Termination Policies and Procedures, Bernard J. Karluk, *University of Pennsylvania*, 1956

D. OTHER

Doctors

An Incremental Analysis of Highway Expenditures in Kentucky, Virgil L. Christian, *University of Kentucky*, 1956

VIII. REORGANIZATION AND LIQUIDATION

B. CAPITAL READJUSTMENTS AND REORGANIZATIONS

Masters

Quasi-Reorganization Procedure in Upward Restatements, Warren F. McCarthy, *University of Pennsylvania*, 1956

IX. EDUCATION

Doctors

A Study of the Accounting Graduates of Five Selected Alabama Schools of Higher Education, 1946–55: Their Occupational History and Their Opinions Relative to Their Training, Percy B. Yeargan, *University of Alabama*, (In Progress)

A Study and Appraisal of Accounting Instruction in Tennessee Colleges and Universities, Axel Wilhelm Swang, *University of Alabama*, 1956

A Suggested Long-Range Professional Program in Public Accounting at the Graduate Level, John B. Ross, *University of Alabama*, (In Progress)

Masters

The Curriculum for Students Seeking a Master's Degree in Accounting as Offered by the Wharton School of Finance and Commerce, Graduate Division of Business and Governmental Administration, David G. Barlow, *University of Pennsylvania*, 1956

The Preparation of Transparencies and Their Use with the Overhead Projector in Teaching Elementary Accounting, Wayne P. Tenney, *University of Texas*, 1956

Interpretive Accounting, Warren L. Slagle, *University of Tennessee*, 1956

X. MISCELLANEOUS

Doctors

Investment Opportunities In the Early 1800's, R. Bruce McCosh, *Indiana University*, (In Progress)

Masters

Accounting Aspects of Preventive Maintenance, Cecil Eugene Worrells, *University of Illinois*, 1956

Ethics of the Legal, Medical, and Public Accounting Profession, Donald Carter Bailey, *University of Alabama*, 1956

Faculty Research

Employee Extra-Compensation Plans, W. H. Reininga and Lee Soltow, *Ohio University*, 1956

Measurement, Paul Kircher, *University of California*, (In Progress)

THE TEACHERS' CLINIC

A. B. CARSON

EDITOR'S NOTE: This section of THE ACCOUNTING REVIEW is devoted to matters of particular interest to accounting instructors. The contribution of articles bearing on the nature and purpose of various types of accounting education, or dealing with techniques of accounting instruction, is invited. Address all correspondence to A. B. Carson, School of Business Administration, University of California, Los Angeles 24, California.

USE OF VISUAL AIDS IN THE TEACHING OF ACCOUNTING*

KENNETH W. PERRY
University of Illinois

LAUREN M. WALKER
University of Washington

When a student enrolls in one of our classes we feel, as we are sure you do if you are a teacher, that we have an obligation to give him everything, accountingwise, that we can during the time in which he is with us. In fact we feel that this obligation or responsibility encompasses not only the student but also his parents, the accounting department, the university, the state (especially if the school is state supported), and last but not least the accounting profession. We, as well as others, feel sure that in many instances the use of visual aids helps in fulfilling this obligation. Not only are such aids frequently time-saving in the presentation of a given amount of information, but also they often permit one to present a greater quantity of information and, at the same time, more up-to-date information.

As indicated by the topic assigned this round table, we want to discuss with you, and briefly demonstrate for you, some of the visual aids currently being used in the teaching of accounting. Since "use" is to be stressed, primary emphasis will be placed on:

1. what is being used
2. where it is being used, and
3. how it is being used

If we should unduly emphasize the aids that we actually use ourselves, we hope that you will forgive us, but since we are most familiar with these, we probably will tend to overemphasize them. Likewise, we would like to point out at the beginning that we are in no way experts on the use of visual aids. In fact we could perhaps better be classified as neophytes in this area. However, we do use them whenever we think they will assist us in doing a better job of teaching, and we certainly believe that in many instances they have helped us considerably.

We are not going to be unduly concerned with the various arguments for and against visual aids in general, nor will we be concerned to any great extent with the pros and cons of one particular aid as compared with another. Incidentally, this type of information is covered very well in the Association's *Accounting Teachers' Guide*,[1] a publication with which we are sure you are all acquainted. We will be concerned mainly, therefore, with specific aids that are actually being used in the teaching of accounting.

The aids to be discussed and demonstrated may be classified into three broad categories, namely (1) opaque projection, (2) transparency projection, and (3) slide and film strip projection.

* Based upon a round table conducted at the annual convention of the American Accounting Association, Seattle, Washington, August 29, 1956.

[1] Cincinnati: South-Western Publishing Co., 1953.

OPAQUE PROJECTION

Opaque projectors may be used for the projection of practically any type of written or printed material without any preliminary reproduction. For discussion and demonstration purposes it is perhaps desirable to classify the material into two categories—raw material and prepared material. By raw material is meant that which may be used in the state in which the instructor receives it, for instance annual reports, magazine articles and/or pictures, and newspaper articles and/or pictures. In contrast, in the other case the instructor must either prepare or have prepared the material to be used, for instance illustrations, examples, and solutions.

The cost of material used with the opaque projector is usually nominal. Generally one's time is the most important cost involved, and in using raw material this may not be too significant since the problem is merely one of selecting suitable material. However, when the material must be prepared, time takes on added significance. The time required to prepare material depends upon the type being prepared and upon how professional one wants the finished product to look. Preparation cost may be reduced by having an assistant prepare the work. In some cases we have had this done. However, we personally prefer to prepare our own, not only because we like to know what is in the material, but because we think that if the student can associate the instructor with the material, the use of the aid does not seem to be as mechanistic—and, of course, when using visual aids, we must constantly guard against mechanization of the classroom.

The ability to handle a variety of materials makes the opaque projector suitable for and adaptable to many different types of accounting courses, ranging all the way from elementary to graduate. Although it is currently being used primarily on the undergraduate level, we personally think that in some instances its use would be feasible on the graduate level.

In addition to its use in specific classes, opaque projection may be used advantageously for many other purposes, including such activities as examination preparations. For example, if in the process of preparing an examination it is desirable or necessary to discuss the questions or problems with other instructors, it is very practicable to have a small "get-together," project the proposed exam on the screen, discuss it and make alterations as needed. This procedure saves not only the time and cost of reproduction, but since only one copy is in existence, it permits a certain amount of security which might not exist if several copies of the exam were in circulation.

(A brief demonstration was given at this point followed by questions and discussion from the floor regarding the use of opaque projection in accounting classrooms. The demonstration was built around materials actually being used in the teaching of accounting. Course material used was taken from an auditing course, an advanced problems course, a CPA coaching course, and an undergraduate theory course. The demonstration and discussion emphasized the fact that this type of projection permits an instructor to present more information in a given amount of time while also permitting the use of more up-to-date information.)

TRANSPARENCY PROJECTION

Transparency projection, although one of the newest types of projection, is, in many instances, rapidly becoming one of the most popular. This type of projection, which is basically the same as that frequently used in bowling alleys whereby scores are grease-pencilled on transparent sheets and projected upon a screen, often

provides an instructor with many opportunities for imparting more information in less time. A large image is projected at a short screen distance permitting the use of the projector in front of the class, which enables the instructor to face and speak directly to his students while coordinating the use of the projector and transparencies with his usual class presentation. Consequently this type of projection, if skillfully used, gives the teacher the advantages of visual presentation while preserving his personal identity.

Transparencies to be used in the teaching of accounting may be reproduced from practically any type of written or printed material. Reproduction may be accomplished either by hand or by the use of various chemical, photographic, or lithographic processes. The methods are relatively simple, and the cost is comparatively low. As in the case of opaque projection, one's time is again one of the most important costs. However, if several instructors use the transparencies, the cost is reduced.

(A brief demonstration was given, followed by questions and discussion from the floor, regarding the use of transparency projection in the teaching of accounting. Again the demonstration was built around materials actually being used in accounting classrooms. Course material used was taken from an elementary course and an auditing course. The discussion that followed emphasized the possibilities offered by this type of projection in such courses as cost, advanced problems, and budgeting. The ability of this type of projection to present with clarity a mass of detail in addition to its ability to permit the instructor to present more information in less time was also emphasized.)

SLIDE AND FILM STRIP PROJECTION

Since slides and film strips possess a number of common characteristics they may be considered simultaneously. For example, many of the projectors are built to handle both forms of projection, and the methods of preparing material depend upon similar processes. Likewise, slides and film strips may be used for similar course purposes. However, whereas slides constitute individual units which may be shown separately, film strips consist of continuous rolls of film.

As in the case of transparency projection, practically any kind of written or printed material may be reproduced at a nominal cost and used in slide or film strip projection. Although the out-of-pocket cost for preparation of material is greater than in the case of opaque or transparency projection, one's use of time is not as great, and the out-of-pocket cost may be spread if several instructors use the same slides and film strips.

(Again, a brief demonstration was given followed by a discussion period. The slide demonstration was built around materials actually being used in the teaching of accounting, whereas the film strip demonstration was based on material prepared by the American Management Association. Course material for the slide demonstration was taken from a cost course, a budgeting course, and an undergraduate theory course. The film strip used was entitled "Data and Decision," shown primarily to demonstrate the possibilities offered by film strip projection. As in the case of the previous discussions, the ability to present more information in less time was emphasized.)

CONCLUSION

In conclusion it should be reiterated that regardless of whether one is currently using visual aids in the teaching of accounting, if they can in any way help to fulfill the responsibility to the student, his parents, the department, the university, and the accounting profession, the possibility of

using them should be considered. As we have tried to indicate, we personally believe that they do help us fulfill this obligation in many instances by permitting us to present more information in less time and at the same time permitting us to present more up-to-date information.

TRY THIS ON YOUR CLASS, PROFESSOR—A REJOINDER

R. Lee Brummet
University of Michigan

It may seem a bit unusual to take issue with an article in the Teachers' Clinic section, but Mr. Marple's contribution to this section of the July, 1956 issue of the Review should not be allowed to pass without critical observation. Mr. Marple's article, "Try This on Your Class, Professor," is more than a suggested technique of accounting instruction. It also involves conclusions which are suggested, at least by implication, to be logical and reasonable developments from "basic postulates which underlie our accounting practices."[1]

The techniques used by Mr. Marple to gain class participation and to encourage students to think are commendable. It is important that we encourage consideration of basic postulates that underlie our accounting practices, and that we do not dwell to too great an extent upon procedural techniques to the exclusion of more basic tools. It is not, therefore, with Mr. Marple's suggested classroom techniques that I find fault, but rather with his conclusions and with the strong implication that such conclusions are in accord with basic postulates of accounting.

Mr. Marple envisages the situation of The All Fixed Company of 1975. "The company is so named because it has no variable costs—all of its costs are fixed and vary with time rather than output."[2] He then compares the reported income for two successive months. Sales amount to 10,000 units in each of the two months. Production is at a 20,000 unit level in the first month and no goods are produced in the second month.

Assigning production costs to products and allowing some of them to remain in inventory Mr. Marple shows that a net profit of $120,000 is reported for the first month and a net loss of $160,000 is reported for the second month. He attempts to relate these results to those provided by conventional break-even analyses and to expectations of those who are convinced that net income should change in a direct relationship to sales volume. The frustrations caused by these attempts are used by Mr. Marple's professor to lead his class into sublime approval of direct costing for income determination purposes. The professor demonstrates how this direct costing technique produces a $20,000 loss for each of the two months without regard to production volume.

In the next several paragraphs I have suggested a class discussion in which I have in some instances paraphrased Mr. Marple's work. This discussion, however, leads my professor's class to conclusions which are different from those of Mr. Marple's professor's class.

Suppose that the professor, having set the stage of the "All Fixed Company," places on the board the income statement shown below and suggests that it applies equally well to each of two successive months during which production was at

[1] The Accounting Review, July, 1956, p. 492.
[2] *Ibid.*

20,000 units and no units, respectively. He explains that the practical capacity of the plant is 20,000 units per month.

ALL FIXED COMPANY
Income Statement

Sales—10,000 units		$300,000
Cost of sales		—0—
Gross margin		$300,000
Production expenses	$280,000	
General and administrative expenses	40,000	320,000
Net loss		$ 20,000

The professor now explains that since sales volume was the same for the two periods, net profit figures were also the same. In this case he shows that the Company lost $20,000 in each of the two periods. Now let's listen in on the class discussion.[3]

Professor: Does it seem logical that profits for the second period should be the same as those for the first period even though the physical facilities were utilized to their maximum in the first period and were allowed to be completely idle during the second period?

Student: Well, since all production costs are fixed they were charged in the same amount to both periods without regard to production so that the differing production levels for the two months did not change the computed net income.

Professor: That's right, but if you were the President of the All Fixed Company and you had been schooled in economics, engineering, and accounting and were aware of the importance of maximum utilization of facilities which require fixed cost commitments, what would you think of an accounting system that showed net income to be the same in two periods in which there was a wide difference of activity levels?

Student: I'd think the accounting system was cockeyed. Isn't it a basic principle of accounting that costs attach to products produced and that production costs should be matched against related revenues rather than charged to the period in which they are first recorded? In other words, shouldn't profits vary with production as well as sales. In this case all costs are recorded as fixed. In the first month these costs produced salable products, whereas in the second month these costs were wasted. The profit of the second month must be less than that for the first month. The same profit figure for the two months doesn't make sense.

Student: And they don't jibe with the expected profits either.

Professor: Expected short-term profits are based on estimates of the difference between the margin of revenues over the sum of the costs of products sold and any unabsorbed costs. Can someone tell us what the profit should be for the two-month period when sales amount to $600,000 and production is at one-half of the practical capacity level?

Student: The margin of sales over costs of sales would be $320,000. The company would break even at the production level of 22,857 units or 4/7 of the practical capacity of 40,000 units for a two-months' period. At this level 3/7 of the $560,000 of fixed production costs or $240,000 would be unproductive and therefore properly related to the current periods' revenues. This $240,000 plus $80,000 of general and administrative costs would be exactly offset by the $320,000 margin of sales over the cost of sales. Production for the two periods was only 20,000 units or 2,857 units short of the level needed to break even, so there was a loss.

Professor: And translated into dollar terms?

Student: For every unit by which the com-

[3] The reader may find it interesting to reread Mr. Marple's "class discussion," which starts on page 493 of the July, 1956 issue of the REVIEW, along with this section in order to compare in detail his approach with that which I suggest.

pany failed to produce below 22,857 units they lost $14.00. 2,857 tons times $14.00 is equal to $40,000, which is the loss for the two-month period.

Professor: So it appears that the error is in the equalizing of profits or losses in this case over the two months. Anyone have an idea as to what is wrong?

Student: I see what you mean. Since the facilities were used at a maximum level in the first period and not at all in the second period, costs of the first period produced inventory at the end of the first period which held future benefit for the company whereas the second period's production costs were not effective. They produced nothing which could yield future benefits to the firm.

Professor: That's right. And how were the costs of the second month's revenues affected by the fact that product sold that month was produced in the first month?

Student: They were increased by $140,000 of inventory carried over from the first period.

Professor: Right again. Now, if costs of producing goods in one month relate to revenues in another month when the goods are to be sold, why shouldn't they be charged to inventory and carried forward as a charge to the second month?

Student: They should. As I see it, fixed costs like rent, insurance, and depreciation are costs of product which should be inventoried as long as the facilities to which they relate are used in the production of these products. But how about variable costs like material and labor?

Professor: Variable costs are also necessary to produce goods. They too should be deferred in inventory until the product to which they apply is sold. But in the All Fixed Company all of the costs are fixed.

Fixed costs should be deferred relate to future

Student: But how about the inventory on the balance sheet? I thought accountants were conservative, and since there would be no additional cost of producing the sales requirement of 10,000 units for the second period how can the inventory be thought to have any value?

Professor: Inventory valuation is based upon costs incurred as the most reasonable objective approximation of future benefits to be enjoyed. Costs of the first period resulted in goods which were sold in the second period. Isn't it logical to say that the "value" of an inventory is measured by the costs which are related to goods to be sold in the future?

Student: Perhaps it has a "value" in that sense to the company, but does it have any real significance to the company since they can produce another 10,000 units without additional costs?

Professor: We can recognize that to be the case. Yet the fact remains that the $280,000 of costs for the first period were effective in producing 20,000 units of product of which only one-half were sold in the first month. In order to match costs against revenues one-half of the $280,000 or $140,000 should be matched against the sales of the second period. The inventory valuation procedure is the tool by which this matching is accomplished.

To refuse to recognize any dollar inventory at the end of the first month is just as unreasonable as the "cost or market, whichever is lower" procedure. Although an exact analogy between these two procedures is not possible, both of them are based, for the most part, upon conservatism for balance sheet purposes. Adherence to the conservatism criterion may cause gross overstatement of earnings as in the second period for the All Fixed Company when the loss was stated at $20,000 although it should have been $160,000.

The inventory of the All Fixed Com-

pany should have been stated at $140,000 at the end of the first month because this is the portion of the effective costs of production which resulted in the 10,000 units of goods which were not sold until the second month. Class dismissed.

Comparing this classroom discussion with that presented by Mr. Marple serves to point out some of the major points where I would choose to take exception. The classroom setting does not provide a suitable environment for a more complete explanation. I should like, therefore, to follow through in a few areas.

First, Mr. Marple implies strongly that since the break-even chart shows a break-even point of 10,667 tons, it must be impossible to make a profit from sales of less than 10,667 tons. He says that "there must be some error—that a company with a break-even point of 10,667 tons should not show a profit on sales of 10,000 tons."[4] He then proceeds to lead his hypothetical class to agree with him that income measurement is at fault. He thus establishes the break-even analysis as a standard against which income measurement practices may be judged. Whether or not one agrees with the conclusions drawn by Mr. Marple, it seems reasonable to find fault with this basic premise from which he starts.

Here is a good place to call to the students' attention the inevitable failure of conventional break-even analysis and conventional income reporting to harmonize when there are any fixed production costs and when sales and production levels are not the same. Whether this lack of harmony is a fault of income reporting or break-even analysis techniques is another matter.

Without going into greater detail it seems to me that reasonable matching of costs and revenues requires the postponement from matching of all costs that are effective in producing goods until revenues from such goods are recognized. This means that effective production costs should follow the product route in being matched against revenues. They are inventoriable without regard to their tendencies to change in response to changes in the rate of production.

Conventional break-even analysis is limited by the assumption of equality of production and sales levels. For the All Fixed Company, the break-even analysis tells us that when production and sales levels are below 10,667 tons per month the company will lose money. It also indicates that profits will result if production and sales levels are in excess of 10,667 tons per month. It does not show what profits will result if production and sales levels are in excess of 10,667 tons per month. It must be recognized that if fixed costs are substantial and if sales and production levels vary unsympathetically through wide ranges, conventional break-even analysis is not useful in forecasting net income for short time periods.

A second point needs some examination. One can see Mr. Marple's professor glow with pride as his student says: "Isn't it a fundamental principle of accounting that a profit shouldn't be taken until it is realized through sales? In other words, shouldn't profit vary with sales, with some allowance for differences in cost?"[5] The first of these two statements can be answered in the affirmative after mentioning a few practical exceptions. The second statement does not necessarily follow. The realization postulate relates to revenue recognition. This is only one side of the two-sided problem of income measurement as usually practiced. The effects of fixed costs upon income measurement involve matching of costs against revenues and not recognition

[4] *Ibid.*, p. 493.

[5] *Ibid.*, p. 494.

of revenues at the outset. It is not reasonable to imply that absorption costing involves the recognition of unrealized revenues. It is perhaps proper to say that absorption costing recognizes the full content of costs which have brought products to their current status rather than only a part of such costs. This is not the same as saying that unrealized revenue is being recognized. Profits do not necessarily vary solely as a function of sales levels because of adherence to the realization postulate. Profits may show a tendency to vary in direct relationship to both sales and production levels because of both revenue recognition and the matching of production costs.

A third and last point which I should like to consider briefly is Mr. Marple's allusion to the "cost or market, whichever is lower" rule. The analogy which he draws between this rule and the valuation of inventory of the All Fixed Company seems to me to be on precarious grounds. The use of the "cost or market, whichever is lower" rule and the exclusion of fixed costs from inventory valuations have the common feature of conservatism in that they both minimize inventory valuations, but here their similarities end. The "cost or market, whichever is lower" rule, as justified by both the American Institute of Accountants' Committee on Accounting Procedure and the American Accounting Association's Committee on Accounting Concepts and Standards, is an attempt to reduce inventory to the "lower of cost or residual cost." Its application is not based upon the reduction of the inventory valuation to the amount saved because the raw material has been obtained in advance of use. It is based solely on an indication of lack of recoverability of cost or cost plus a reasonable profit. The Committee of the American Accounting Association states, for example, "The residual cost should be carried forward in the balance sheet for assignment in future periods except when it is evident that the cost of an item of inventory cannot be recovered . . . In such event the inventory item should be stated at the estimated amount of sales proceeds less direct expense of the completion and disposal."[6] Thus the analogy between the direct costing method of valuing inventories and the "cost or market, whichever is lower" rule is not proper.

I have been critical of this particular contribution of Mr. Marple's because it advocates direct costing as opposed to absorption costing. I do not wish, however, to go on record as opposing the direct costing idea and the usefulness of related analytical techniques for certain management purposes. Mr. Marple has pointed out some of the advantages of direct costing for managerial analysis in an article appearing in an earlier issue of the REVIEW[7] and in other of his writings. Although there is much truth in reactions of some critics of direct costing to the effect that all that is good about direct costing is not new,[8] this does not refute the importance of segregations of fixed and variable costs and emphasis upon variable costs for certain types of analysis. It does seem, however, that the direct costing procedure is not appropriate for income determination purposes. Enthusiasts for the direct costing procedure should restrain their zeal for this accounting innovation and stop short of advocating it for income measurement and inventory valuation.

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[6] Committee on Accounting Concepts and Standards, American Accounting Association, "Accounting Concepts and Standards Underlying Corporate Financial Statements," 1948 Revision, THE ACCOUNTING REVIEW, October, 1948, p. 341.

[7] Raymond P. Marple, "Direct Costing and the Uses of Cost Data," THE ACCOUNTING REVIEW, July, 1955, p. 430.

[8] See, for example, Howard Greer's "Alternatives to Direct Costing," *N.A.C.A. Bulletin*, March, 1954, p. 878.

THE GRADUATE COURSE IN ACCOUNTING THEORY—SEMINAR STYLE

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The graduate course in Accounting Theory may be taught by the conventional lecture-discussion method; or, where classes are small, it may be organized as a seminar.[1] In the writer's recent experience an effective course has been built by combining both methods in an informal manner, seminar style. Under this plan, responsibility for presenting topics and for leading class discussions is shared by instructor and students.

The main difficulty in charting an outline for the course is the ever-growing breadth of the field of accounting theory. If an attempt is made to cover everything in some detail, the course may lack the needed depth of discussion and will give the student only a superficial insight into the most pressing problems. There is also the difficulty of avoiding duplication of subject matter. Such duplication may mean an unnecessary loss of class time which could otherwise be devoted to a more fruitful discussion of controversial problems of theory.

If the course is designed to serve primarily the accounting major, a substantial number of undergraduate credit hours in accounting is required for admission. The main objective is then to deepen the understanding of certain problems with which the student has already become acquainted in his undergraduate study, rather than to survey the whole field of theory for majors and non-majors alike. The aim is to develop the theoretical thinking of the prospective accounting teacher or researcher or of the practitioner in public, private, or tax accounting who is in need of such training to fill competently a position of responsibility. Students in graduate accounting courses will frequently take their master's degrees in this field, and ideas developed in the theory course may be helpful in formulating plans for a master's thesis. A complete survey of the literature on accounting theory is not necessary to meet this objective; selected readings of recent date, in addition to some reading assignments concerned with fundamentals, should be adequate. The historical development of accounting theory can be taken up in a separate course on the history of accounting; in the theory course greater emphasis may be placed on the relative merits of various theories than on their historical foundations.

The course may begin with a discussion of the relationship between theory and practice. The following two sessions may be devoted to the relationship between economics and accounting. However, instead of attempting at this time to present a full treatment of such basic concepts as income, cost, and capital—these are taken up later in the course—the discussion may well be limited to those areas where there is a direct, practical interrelationship in the application of accounting tools. National income or social accounting may take up at least one entire session. Marginal analysis of revenue and cost, as applied to the accounting problems of break-even point analysis and budgeting, may also be discussed in some detail at this early stage of the course. The relationship between law and accounting can receive a more summary treatment as the effect of the

[1] See: Robert E. Walden, "A Course in Accounting Theory," THE ACCOUNTING REVIEW, April, 1951, p. 221.

federal income tax and other regulatory provisions on accounting procedure is of more practical than theoretical significance and is covered, at least to some extent, in intermediate and advanced undergraduate courses in accounting, taxation, and law. But the possible influence of legal rules on the creation and measurement of accounting values must be stressed.

It is difficult to take up the concepts relating to assets, income, cost, value, and the influence of changes in price level upon accounting measurement in such a way as to present a logical sequence and, at the same time, avoid duplication. The basic concepts of cost and value should be taken up first, to be followed by a discussion of income and then of assets, the influence of price-level changes being the last item in the sequence. Concepts of cost and value have a bearing on income as well as assets and, therefore, should precede the other topics. Detailed coverage of cost accounting concepts need not be a part of the general-theory course. They are covered in the more advanced cost accounting courses, anyhow. On the other hand, such current issues as direct or marginal costing, and full costing, may well be included in the general theory of cost, as these have a bearing on income determination as well as asset valuation, and are basic in nature. Obviously, a discussion of cost and value concepts cannot neglect the economist's point of view. The same applies to income and assets. As the theory of assets is taken up, to a large extent, in the intermediate accounting course, the coverage may be limited to a more searching discussion of those asset items which present important controversies in contemporary thinking and procedure, such as inventories, fixed assets, and, possibly, intangibles. Here again, the "why" rather than the "how" should be the prime concern. Price level changes, while necessarily touched on in connection with the preceding topics, are more immediately related to long-term assets and, therefore, form a logical rallying point for the ideas discussed before. One may even question whether "stabilized accounting" and the use of price level indexes in preparing financial statements should not be taken up after net worth, as all financial data, including net worth, are affected by the application of these procedures. However, the structure of corporate net worth is more legalistic than theoretical in nature, and for this reason it may be more advisable to take up price level changes directly following the discussion of assets.

The topics described so far normally make up the meat of a course in theory. While the presentation of corporate net worth on the balance sheet is based on law rather than theory, the theoretical thinking underlying the state corporation laws should take up at least two sessions. The theoretical status of stock premium and discount, treasury stock and forfeited shares, as well as goodwill and surplus from consolidation, are interesting items for advanced discussion. The form and classification of financial statements in general is again more a matter of procedure than of theory. Nevertheless, it is usually found expedient to round out the theory course with a study of form, classification, and terminology.

The statements of the Committee of Concepts and Standards of the American Accounting Association, the *Research Bulletins* of the American Institute of Accountants, and the *Regulations* and *Rulings* of the Securities and Exchange Commission must be given full recognition in connection with each topic to which they relate. These pronouncements should preferably be considered as a basis for discussion rather than as an ultimate conclusion for the purposes of this course. Recent articles from THE ACCOUNTING REVIEW and *The Journal of Accountancy*, as well as selected

readings on fundamental subjects of accounting theory, should be given ample consideration. One or several anthologies may also be used to provide a basis for discussion, if reading assignments are carefully selected in line with the course objective.

To secure the active participation of each student, occasional oral class reports, one-half to one hour in length, may be assigned on topics which are close to the student's special interest or work experience. These reports can then be discussed by the whole class, and the instructor may use the final one-half hour of each session to su nmarize, elaborate, and expand. He may also suggest additional literature for reference. In order to utilize available class time advantageously, it seems best to have students prepare individual class reports on topics narrow in scope, such as Lifo, Direct Costing, or Goodwill and Surplus from Consolidation, and to have the instructor introduce the class to the broader aspects of theory related to income determination, cost and value concepts, theory of assets, and the like through the means of an occasional lecture. Exchange of students' and instructor's activities in the classroom helps to break monotony and offset any bias.

Work may be evaluated on the basis of quality and originality of oral reports, contribution to class discussions, term papers on individual topics selected by each student, and scores in written examinations. Students should be advised at the beginning of the course concerning the basis and standard used for grading.

PROFESSIONAL EXAMINATION

ACCOUNTING PRACTICE

HENRY T. CHAMBERLAIN

THE following problems were prepared by the Board of Examiners of the American Institute of Accountants and were presented as the first half of the C.P.A. examination in accounting practice on May 15, 1957.

The candidates were required to solve Problem 1; any two of Problems 2, 3 and 4 and either Problem 5 or Problem 6. The total weight assigned to this section was 50 points and the examiners point out that the suggested time allowances given below are closely proportional to the point value of the various problems.

The suggested time allowances are as follows:

Problem 1	25 to 35 minutes
Any two of Problems 2, 3 and 4	80 to 120 minutes
Problem 5 or Problem 6	70 to 115 minutes

At the examination candidates were furnished a work sheet for Problem 5 containing the material in the first two columns of the solution work sheet. With respect to Problem 6, candidates were given the T accounts to be used in preparing their solutions.

Number 1

The following 50 items relate to Federal Income Taxes. You are to assume in each case that the taxpayer files the long form 1040 return and that he itemizes his deductions. Also assume in each case where it is pertinent that he is an employee and that he has no Section 1231 gains. *The items are not related to one another, but each is to be considered independently.*

On the answer sheet provided, you are to enter an "X" in the proper column for each of the 50 items based on your decision as to whether the item is *Not Deductible, Deductible in Determining Adjusted Gross Income*, or *Deductible from Adjusted Gross Income.*

1. Depreciation of reference books by a teacher.
2. Payment of repair bill of $49.00 for damage to pleasure automobile from skid on icy road. (Not compensated for by insurance. Repair bill is a fair measure of the loss incurred.)
3. Fee paid employment agency for obtaining employment.
4. Labor union dues.
5. Loss of $200 on sale of Sigma Mining Corporation stock to son.
6. Fair market value of stamp collection (a hobby) stolen from home. Fair market value is less than cost.
7. Contribution to "Empty Stocking Fund" raised by neighbors for children of a needy family.
8. Purchase of Christmas seals (stamps) from Tuberculosis League.
9. Traveling expenses (overnight) of teacher attending scientific convention. Not reimbursed.
10. Bad debt of $50 on personal loan to a friend.
11. State income tax on individuals.
12. Federal cigarette tax.
13. State gasoline tax for pleasure car.
14. Depreciation on apartment building owned as an investment.
15. State fishing license.
16. Damage to lawn due to the usual August dry spell.
17. Loss of many of evergreens surrounding residence due to prolonged unexpected and unusual severe drought in September, October, and November.
18. Interest of $100 paid on loan on life insurance. Loan was used to finance purchase of income-producing securities.
19. Fee paid to take the C.P.A. examination.
20. Safe deposit box rental, $7.20, for personal income-producing securities.
21. Safe deposit box fee, $6.00, for personal jewelry.

22. Federal tax, $1.20, on safe deposit box in item 21.
23. Fee to Smith & Brown, firm of investment consultants, for advice on personal portfolio of securities.
24. Cost of spiked shoes bought by professional baseball player.
25. Dues to American Institute of Accountants paid by a member of staff of Jones & Co., C.P.A.'s.
26. Ring lost from owner's finger while swimming.
27. Loss on sale of personal automobile.
28. Entertaining customers, by employee (not an outside salesman), not reimbursed. Entertaining is required; also ordinary and necessary.
29. Cost of cleaning uniform paid by train conductor.
30. Loss of $10 playing "Spin-the-Wheel" at a fair sponsored by Volunteer Fire Company.
31. Amortized bond premium for the year on New York State Bonds.
32. Cost of tools (life less than one year) necessary for employee's job; not reimbursed.
33. Cleaning and laundry expenses while traveling away from home.
34. Fair market value of furniture given to the Salvation Army.
35. Damage to personal residence by bursting of pipes resulting from an unusually severe freeze.
36. Medical expenses paid in 1956, incurred in 1955. (Answer with regard to deductibility in 1956 tax return.)
37. $1.00 for 16-year-old daughter's driver's license. She is dependent of father taxpayer.
38. State stamp taxes on securities sold by investor.
39. Attorney's fee for searching title to residence purchased.
40. Fair market value ($20) of one pint of blood donated to Memorial Hospital.
41. Periodic alimony payment made pursuant to divorce decree (which ex-wife included in gross income).
42. Premium amortized on non-convertible corporate bonds.
43. $10 cost (also fair market value) of cakes donated to church for a bake sale.
44. Entertainment expenses required of an outside salesman; not reimbursed.
45. Attorney's fee for obtaining divorce.
46. Car pool expenses for driving to and from work in excess of amounts received from passengers.
47. Traveling costs (overnight) in search of employment.
48. Cost of refresher course taken at evening school (not required by his employer).
49. Interest for the year on mortgage held by taxpayer's brother. Interest and mortgage were paid on December 31.
50. Cost of repairs to neighbor's automobile which you side-swiped when pulling into your driveway; no insurance.

Number 2

F. Leftgal is a plumbing contractor operating as a sole proprietorship.

It is the regular practice of the business at the time a contract is received to set up the full contract price by a charge to Accounts receivable and a credit to Unearned contract sales. As work progresses on an individual contract, progress billings are sent to customers. No entry is made on the books for such progress billings. Collections are entered as a credit to Accounts receivable. ***Income is recognized on a completed contract basis for statement purposes.***

No charge is made to Work-in-process for general overhead expenses until a contract is completed and closed out to completed contracts. At that time 10% is added to direct costs as an allocation of general expenses. There are no inventories of materials since they are purchased only as needed for contracts.

The following balances are shown by the books as of December 31, 1956:

	Debit	*Credit*
Cash	$ 5,200	
Accounts receivable	125,500	
Work-in-process	118,250	
Fixed assets (net)	21,000	
Accounts payable		$ 5,100
Unearned contracts		144,000
Leftgal, capital		67,850
Contract sales		400,000
Cost of sales	308,000	
Expenses	67,000	
Expenses absorbed		28,000
	$644,950	$644,950

The following schedule of accounts receivable and work-in-process has been prepared by the bookkeeper.

	Accounts Receivable	*Direct Costs*	*Contract Price*	*Amount Billed*
Easy Co.	$ 46,500	Closed		
Louis Building Co.	—	$ 7,500	$ 9,000	$ 9,000*
Joseph & Sons, Inc.	1,000	17,500	15,000	15,000*
Goss Wreckers	2,000	8,250	14,000	13,000
Bealey Co.	11,000	35,000	41,000	30,000
Davis Co.	65,000	50,000	65,000	30,000
	$125,500	$118,250	$144,000	$97,000

* Completed contracts not closed on books.

You are to prepare a formal balance sheet as of December 31, 1956 and an income statement for the year. Support all items requiring adjustments with appropriate schedules or computations in good form.

Number 3

A client has recently leased manufacturing facilities for production of a new product. Based on studies made by his staff, the following data have been made available to you:

Estimated annual sales		24,000 units
Estimated costs:	*Amount*	*Per Unit*
Material	$ 96,000	$4.00
Direct labor	14,400	.60
Overhead	24,000	1.00
Administrative expense	28,800	1.20
Total	$163,200	$6.80

Selling expenses are expected to be 15% of sales and profit is to amount to $1.02 per unit.

a. Compute the selling price per unit.
b. Project a profit and loss statement for the year.
c. Compute a breakeven point expressed in dollars and in units assuming that overhead and administrative expenses are fixed but that other costs are fully variable.

Number 4

On January 1, 1956 Medium City established a working capital fund for operating a central motor vehicle pool. It transferred $100,000 from the general fund.

Immediately upon establishment, a fleet of trucks were purchased as follows:

Type	*Number*	*Cost per Truck*
4-ton GMC	4	$3,500
3-ton Ford	4	2,500
3-ton Mack	4	2,200
1-ton Dodge	5	1,500

Operating each of the three- and four-ton trucks requires a driver and a helper who are paid standard wage rates of $2.00 and $1.50 per hour, respectively. The one-ton trucks do not require a helper.

All trucks are depreciated on a straight-line basis over a 5-year period with 5% residual salvage value.

Trucks are rented to the general fund on an hourly basis and the following usage and gasoline costs were reported for the year ended December 31, 1956:

	Rental Rate per Hour	Total Number of Hours Used	Cost of Gasoline Used
4-ton GMC	$5.50	6,000	$2,400
3-ton Ford	5.00	8,000	2,400
3-ton Mack	5.00	8,000	2,800
1-ton Dodge	3.00	15,000	3,000

The following additional costs were incurred in operation of the fleet:

(1) Drivers and helpers wages were paid for exactly the hours the trucks were used. There was no unpaid payroll at the end of the year.

(2) Unpaid gasoline invoices at December 31, 1956 aggregated $1,500.

(3) Other indirect costs incurred were as follows:

Supervision	$15,000
Repairs	10,000
Tires and tubes purchased	1,600

There were no unpaid bills at December 31, 1956 pertaining to the above items; however, at the end of the year the fund had on hand an inventory of new tires costing $500.

During the year the general fund paid the vehicle pool $95,000 on its account for services rendered.

a. You are to prepare the journal entries to open the fund, to record the transactions in it for 1956, and to close the fund at December 31st.

b. Prepare a balance sheet in good form for the fund as of December 31, 1956. (A worksheet is *not acceptable* in meeting this requirement. It is suggested that the statement be prepared from the entries and the use of skeleton "T" accounts.)

Number 5

a. On the worksheet enclosed, the balance sheets and statements of income for the year ended December 31, 1956 of the X Company and its wholly-owned subsidiary the Y Company, are given in columnar form. Additional information about the companies is given below.

Complete the worksheet, making the necessary eliminating and adjusting entries and extend the consolidated figures for the statement purposes. *Key the debit and credit side of each entry.*

b. Prepare a schedule showing the changes for 1956 in retained earnings of the companies and the entries necessary for consolidation.

Additional Information

(1) Marketable securities of the subsidiary includes $20,000 cost of shares of the parent company's stock acquired for payment of bonuses.

(2) There is merchandise billed at $10,000 in transit from the parent to the subsidiary which has not been recorded by the subsidiary.

(3) It has been determined that there is intercompany profit of $20,000 in the portion of the subsidiary's inventory purchased from the parent. The equivalent figure at December 31, 1955 was $10,000.

(4) The parent's equity in the subsidiary was $200,000 at the date of acquisition.

(5) Sales by the parent to the subsidiary in 1956 totaled $1,700,000.

(6) The parent has made a service charge of $50,000 to the subsidiary which is included in Other income of the parent and in Administrative expenses of the subsidiary.

Number 6

The Johnson Company began operations on January 1, 1956. It manufactures a single product. The company installed a standard cost system, but *will adjust all inventories to actual cost for financial statement purposes at the end of the year.*

Under its cost system, raw material inventory is maintained at actual cost. Charges made to work-in-process are all made at standard prices. Variance accounts are used into which all variances are entered as they are identified.

One-half of the cost of raw material for each unit is put into production at the beginning of the process and the balance when the processing is about one-third completed.

Standard cost was based on 256,000 direct labor hours with a production of 1,600 units. The standard was as follows:

Materials (100 lbs. @ $2.00)	$200
Direct labor (160 hrs. @ $1.25)	200
Manufacturing expense (based on direct labor hours) (160 @ $0.25)	40
Total standard cost per unit	$440

A summary of the transactions for the year ended December 31, 1956 shows the following:

Material purchased (180,000 lbs. @ $2.20)	$396,000.00
Direct labor (247,925 hrs. @ $1.30)	322,302.50
Manufacturing overhead	49,585.00
Material issued to production	177,600 lbs.
Units processed:	
Units completed	1,500
Units one-half complete	150
Units one-fourth complete	30

a. Using the form provided, record the transactions in the manufacturing accounts only for the year. In each account, give an indication of the nature of each item recorded. *Do not use any additional accounts.*

b. Using the skeleton ledger accounts in which costs were recorded, make the entries needed to adjust Finished goods to actual cost for material. Give identifiable supporting computations showing clearly the method of arriving at each adjustment. *You need not adjust for labor or manufacturing expense.*

c. Prepare a statement showing details of the material cost included in work-in-process inventory as adjusted to actual cost.

Solution to Problem 1

Item	Not Deductible	Deductible: In Determining Adj. Gross Inc.	Deductible: From Adjusted Gross Income
1			X
2			X
3			X
4			X
5	X		
6			X
7	X		
8			X
9		X	
10		X	
11			X
12	X		
13			X
14		X	
15	X		
16	X		
17			X
18			X
19	X		
20			X
21	X		
22	X		
23			X
24			X
25			X

Item	Not Deductible	Deductible: In Determining Adj. Gross Inc.	Deductible: From Adjusted Gross Income
26	X		
27	X		
28			X
29			X
30	X		
31	X		
32			X
33	X		
34			X
35			X
36			X
37	X		
38			X
39	X		
40	X		
41			X
42			X
43			X
44		X	
45	X		
46	X		
47	X		
48	X		
49			X
50	X		

Solution to Problem 2

Following are the required adjustments to the trial balance given in the problem:

(1) Cost of sales	$25,000.00	
Unearned contracts	24,000.00	
Work in process		$25,000.00
Contract sales		24,000.00

To adjust for completed contracts not closed on the books:

	Direct Costs	*Contract Price*
Louis Building Co.	$ 7,500.00	$ 9,000.00
Joseph & Sons, Inc.	17,500.00	15,000.00
	$25,000.00	$24,000.00

(2) Cost of sales	$ 2,500.00	
Expenses absorbed		$ 2,500.00

To allocate a portion of general expenses to direct costs (10% of $25,000.00 for completed contracts.

(3) Unearned contracts	$47,000.00	
Accounts receivable		$47,000.00

To adjust the balance of accounts receivable for the amount of contracts not billed:

Contract price for:	
Goss Wreckers	$ 14,000.00
Bealy Co.	41,000.00
Davis Co.	65,000.00
Total	$120,000.00
Less amount billed on above contracts	73,000.00
Unbilled portion of above contracts	$ 47,000.00

(4) Unearned contracts	$73,000.00	
Work in process		$68,250.00
Advance billings		4,750.00

To adjust work in process for costs billed to customers. (Goss, $8,250.00; Bealey, $30,000.00; Davis, $30,000.00) and to set up liability for billings in excess of costs (Goss, $4,750.00)

F. LEFTGAL
BALANCE SHEET
DECEMBER 31, 1956

ASSETS

Current Assets:		
Cash	$ 5,200.00	
Accounts receivable	78,500.00	
Work in process	25,000.00	$108,700.00
Fixed Assets (net)		21,000.00
Total Assets		$129,700.00

LIABILITIES AND CAPITAL

Current Liabilities:		
Accounts payable	$ 5,100.00	
Advance billings	4,750.00	$ 9,850.00
Leftgal, Capital		
Balance at January 1, 1956	$67,850.00	
Net income for the year ended December 31, 1956	52,000.00	119,850.00
Total liabilities and capital		$129,700.00

F. LEFTGAL
INCOME STATEMENT
FOR THE YEAR ENDED DECEMBER 31, 1956

Contract sales	$424,000.00
Less cost of sales	335,500.00
Gross profit from operations	$ 88,500.00
Less unabsorbed general expense	36,500.00
Net income for the year	$ 52,000.00

Solution to Problem 3

a. *Selling Price per unit:*
Let X = Selling price
X = $6.80 + $1.02 + .15 X
.85 X = $7.82
X = $7.82 ÷ .85
X = $9.20

b. *Projected Income Statement:*

Sales (24,000 units @ $9.20)		$220,800.00
Less: Cost of sales:		
Material	$96,000.00	
Direct labor	14,400.00	
Overhead	24,000.00	134,400.00
Gross profit		$ 86,400.00
Less:		
Administrative expenses	$28,800.00	
Selling expenses (15% of $220,800)	33,120.00	61,920.00
Net income		$ 24,480.00

c. *Computation of Breakeven Point*
Let X = number of units necessary to be sold
X (9.20) − X (4.60) − 15% (X (9.20)) − 52,800 = 0 or breakeven point
9.20 X − 4.60 X − 1.38 X = 52,800
3.22 X = 52,800
X = 52,800 ÷ 3.22
X = 16,397.5
Number of units necessary to be sold: 16,398
Total sales at breakeven point: $150,861.60

Solution to Problem 4

(A)

(1) Cash	$100,000	
Advance from General Fund		$100,000
To record the establishment of the vehicle fund		
(2) Motor vehicles	$ 40,300	
Cash		$ 40,300
To record the purchase of vehicles		
(3) Due from general fund	$158,000	
Rental income		$158,000
To record total rent due from general fund for use of motor vehicles		
(4) Gasoline expense	$ 10,600	
Drivers' and helpers' wages	107,000	
Depreciation expense	7,657	
Supervision	15,000	
Repairs	10,000	
Tire and tube inventory	1,600	
Cash		142,700
Accounts payable		1,500
Reserve for depreciation of motor vehicles		7,657
To record various expenses and purchases of the fund		
(5) Tire and tube expense	$ 1,100	
Tire and tube inventory		$ 1,100
To adjust inventory at year end for inventory on hand		

(6) Cash	$ 95,000	
Due from general fund		$ 95,000
Receipts from general fund for services		
(7) Rental income	$158,000	
Gasoline expense		$ 10,600
Drivers' and helpers' wages		107,000
Depreciation expense		7,657
Supervision		15,000
Repairs		10,000
Tire and tube expense		1,100
Unappropriated surplus		6,643
To close out operating account to surplus		

MEDIUM CITY—VEHICLE FUND
BALANCE SHEET
DECEMBER 31, 1956

(B)

ASSETS

Cash	$ 12,000.00
Due from General Fund—current account	63,000.00
Tire and tube inventory	500.00
Motor vehicles, less reserve, $7,657.00	32,643.00
Total Assets	$108,143.00

LIABILITIES AND SURPLUS

Accounts payable	$ 1,500.00
Advance from General Fund	100,000.00
Unappropriated surplus	6,643.00
Total Liabilities and Surplus	$108,143.00

Solution to Problem 5

X COMPANY AND SUBSIDIARY
CONSOLIDATING BALANCE SHEET
DECEMBER 31, 1956

	X Company	*Y Company*	*Eliminations and Adjustments* Debit	Credit	*Consolidated*
Cash	$ 250,000	$ 130,000			$ 380,000
Marketable securities	400,000	150,000		(1) $ 20,000	530,000
Accounts receivable—customers	1,250,000	540,000			1,790,000
Allowance for doubtful accounts	(25,000)	(10,000)			(35,000)
Subsidiary current account	100,000			(8) 100,000	
Inventories	1,100,000	600,000	(2) $ 10,000	(3) 20,000	1,690,000
Treasury stock	50,000		(1) 20,000		70,000
Stock of Y Company (at cost)	150,000			(4) 200,000	(50,000)*
Advances to subsidiary	420,000			(8) 420,000	
Plant, property & equipment (net)	1,525,000	710,000			2,235,000
	$ 5,220,000	$2,120,000			$ 6,610,000
Accounts payable	$ 575,000	$ 185,000			$ 760,000
Accrued expenses	350,000	100,000			450,000
Due to X Company		90,000	(8) 100,000	(2) 10,000	
Estimated Federal taxes	525,000	275,000			800,000
Advances from parent		420,000	(8) 420,000		
Capital Stock	1,000,000	150,000	(4) 150,000		1,000,000
Retained earnings 1-1-56	2,420,000	825,000	(3) 10,000 (4) 50,000		3,185,000
Net income	650,000	250,000	(5) 10,000 (7) 175,000		715,000
Dividends paid	(300,000)	(175,000)		(7) 175,000	(300,000)
	$ 5,220,000	$2,120,000	$ 945,000	$ 945,000	$ 6,610,000
Net sales	$10,000,000	$4,600,000	(5) $1,700,000		$12,900,000
Cost of goods sold	(6,700,000)	(3,210,000)	(3) 10,000	(5) $1,700,000	(8,220,000)
Selling, general & administrative	(2,400,000)	(900,000)		(6) 50,000	(3,250,000)
Other income (net)	250,000	20,000	(6) 50,000 (7) 175,000		45,000
Estimated Federal Income taxes	(500,000)	(260,000)			(760,000)
Net income	$ 650,000	$ 250,000			$ 715,000

* Excess of book value at acquisition over cost of investment.

THE X COMPANY AND SUBSIDIARY
ANALYSIS OF RETAINED EARNINGS
FOR THE YEAR ENDED DECEMBER 31, 1956

	X Company	Y Company	Eliminations and Adjustments Debit	Eliminations and Adjustments Credit	Consolidated
Retained earnings at 1-1-56	$2,420,000	$ 825,000	(3) $ 10,000 (4) 50,000		$3,185,000
Net income	650,000	250,000	(3) 10,000 (7) 175,000		715,000
	$3,070,000	$1,075,000			$3,900,000
Dividends paid	300,000	175,000		(7) $175,000	300,000
Retained earnings at December 31, 1956	$2,770,000	$ 900,000	$245,000	$175,000	$3,600,000

KEY TO ADJUSTMENTS AND ELIMINATIONS
(1) To reclassify securities of the X Company owned by the Y Company as treasury stock.
(2) To record merchandise in transit to the Y Company.
(3) To eliminate intercompany profit in the beginning and ending inventories.
(4) To eliminate the X Company's equity in the Y Company's net worth at date of acquisition.
(5) To eliminate the inter-company sales and purchases.
(6) To eliminate intercompany income and expense.
(7) To eliminate intercompany dividends.
(8) To eliminate intercompany receivables and payables.

Solution to Problem 6

JOHNSON COMPANY
MANUFACTURING ACCOUNTS LEDGER

RAW MATERIALS

(1) Raw materials purchased	$396,000.00	(4) Cost of material placed in process.	$390,720.00

DIRECT LABOR

(2) Cost of direct labor	$322,302.50	(5) Closed to work in process and variance accounts	$322,302.50

MANUFACTURING EXPENSE

(3) Manufacturing expenses incurred.	$ 49,585.00	(6) Closed to work in process and variance accounts	$ 49,585.00

WORK IN PROCESS

(4) Material at standard (1,665 units @ $200)	$333,000.00	(8) Transferred to finished goods	$660,000.00
(5) Labor at standard (1,582½ units @ $200)	316,500.00		
(6) Overhead at standard (1,582½ units @ $40)	63,300.00		

FINISHED GOODS

(8) Transferred from work in process.	$660,000.00		
(9) Adjustment for price variance of materials (See calculation)	32,000.00		
(10) Adjustment for quantity variance of materials. (See calculation)	20,000.00		

MATERIALS PRICE VARIANCE

(4) Material price variance (177,600 lbs. @ 20¢)	$ 35,520.00	(9) To adjust finished goods	$ 32,000.00

MATERIALS QUANTITY VARIANCE

(4) Material quantity variance (11,100 lbs. @ $2.00)	$ 22,200.00	(10) To adjust finished goods	$ 20,000.00

LABOR RATE VARIANCE

(5) Labor rate variance (247,925 hrs. @ \$.05 .... \$ 12,396.25	

LABOR HOURS VARIANCE

	(5) Labor hours variance (5,275 hrs. @ \$1.25) .... \$ 6,593.75

MANUFACTURING EXPENSE EFFICIENCY VARIANCE

	(6) Overhead efficiency variance (5,275 hrs. @ \$.25) .... \$ 1,318.75

MANUFACTURING EXPENSE CAPACITY VARIANCE

(7) Overhead capacity variance (8,075 hrs. less than budget @ \$.25 per hr.) \$ 2,018.75	

MANUFACTURING EXPENSE BUDGET VARIANCE

	(6) Overhead budget variance (Amount spent under budget: \$64,000 minus \$49,585) .... \$ 14,415.00

(b) ***Computation of material adjustment to finished goods:***

Number of equivalent units produced:	
Completed units	1,500
Units one-half complete (100% complete with respect to material)	150
Units one-fourth complete (50% complete with respect to material)	15
	1,665
Total material used to produce 1,665 units	177,600 lbs.
Average number of lbs. per unit	$106\frac{2}{3}$ lbs.
Adjustment for material price variance ($106\frac{2}{3}$ × excess of cost over standard or 20¢ × 1,500 completed units)	\$32,000.00
Adjustment for quantity variance ($6\frac{2}{3}$ × 1,500 × \$2.00)	\$20,000.00

(c)

Material at standard in work in process (165 units @ \$200.00 per unit)	\$33,000.00
Adjustment for material price variance ($106\frac{2}{3}$ × excess of cost over standard or 20¢ × 165 units)	3,520.00
Adjustment for material quantity variance ($6\frac{2}{3}$ × 165 × \$2.00)	2,200.00
Actual cost of material in work in process	\$38,720.00

PROFESSIONAL EXAMINATION

AUDITING

R. K. Mautz

The auditing section of the May, 1957 Uniform C.P.A. Examination was given Thursday morning, May 16 from 9:00 to 12:30. It includes two groups of questions. Seven questions are included in Group I, of which five were required. The estimated time for this group is a minimum of 90 and a maximum of 120 minutes. Group II includes two required questions, each of which is estimated to require from 30 to 45 minutes. The estimated time allowances are approximately proportional to the point value of the problems, the total of which for this examination is 100 points.

Group I

Estimated time—90 to 120 minutes. Answer any five questions in this group. If more are answered, only the first five will be considered.

Question Number 1

In connection with your audit of the ABC Co. at December 31, 1956 you were given a bank reconciliation by a company employee which shows:

Balance per bank	$15,267
Deposits in transit	18,928
	$34,195
Checks Outstanding	21,378
Balance per books	$12,817

As part of your verification you obtain the bank statement and cancelled checks from the bank on January 15, 1957. Checks issued from January 1 to January 15, 1957 per the books were $11,241. Checks returned by the bank on January 15 amounted to $29,219. Of the checks outstanding December 31, $4,800 were not returned by the bank with the January 15th statement, and of those issued per the books in January 1957, $3,600 were not returned.

a. Prepare a schedule showing the above data in proper form.

b. Suggest four possible explanations for the condition existing here and state what your action would be in each case, including any necessary journal entry.

Answer Number 1

a. Disbursements per bank	$29,219
Less December checks which cleared bank in January, 1957	16,578
	$12,641
Add January 1957 checks which did not clear bank by January 15	3,600
Disbursements per books if bank records correct	$16,241
Disbursements per books as stated	11,241
Unexplained difference	$ 5,000

b. Possible explanations of difference:

(1) An unrecorded check or checks may have been drawn in January and cleared the bank before January 15. The failure to record could be deliberate or unintentional. Search returned checks for items not recorded by comparing returned checks with record of checks issued. If found, notify appropriate officer of client company and record check by appropriate entry:

Debit: Loss or Miscellaneous Receivables	$5,000	
Credit: Cash		$5,000

2. The outstanding checks at December 31, 1956 may have been understated to "force" a bank reconciliation at that date. Search returned checks for any items dated before December 31, 1956 but not included in the outstanding checks at that date. If found, notify appropriate officer

of client company and record check by appropriate entry:

Debit: Loss or Miscellaneous Receivables	$5,000	
Credit: Cash		$5,000

(3) The total of checks issued per books could have been misfooted or otherwise determined incorrectly. Foot check register and notify appropriate officer of client company if error found. If footing and posting are corrected, no adjusting entry will be necessary. If posting has already been made, an adjusting entry charging the appropriate account not previously charged and crediting cash may be made:

Debit: Account not previously charged	$5,000	
Credit: Cash		$5,000

(4) The bank may have charged against the company:

a. A check drawn by another company or on another account of the same company. Search the returned checks for improper charge and notify the bank.

b. The amount of a note payable due between December 31, 1956 and January 15, 1957. Debit ticket should be included with bank statement. Record as follows:

Debit: Notes Payable	$5,000	
Credit: Cash		$5,000

Question Number 2

State five of the principal uses of audit working papers.

Answer Number 2

Some of the principal uses of audit working papers are:

1. To accumulate information for the financial statements and audit report.
2. To serve as a record of verification steps completed or in process.
3. To facilitate the verification of certain balances or other amounts for which involved calculations or comparisons are necessary.
4. To provide a means whereby written instructions to assistants may be organized and preserved.
5. To support the accountant's contentions as to scope and adequacy of his examination in case of litigation or other question.
6. To collect and preserve information necessary to the preparation of income tax returns.
7. To explain and support adjusting entries.
8. To provide a basis for review by supervisors and partners.

Question Number 3

In an annual audit at December 31, 1956 you find the following transactions near the closing date.

(1) Merchandise costing $1,822 was received on January 3, 1957 and the related purchase invoice recorded January 5. The invoice showed the shipment was made on December 29, 1956, F.O.B. destination.

(2) Merchandise costing $625 was received on December 28, 1956 and the invoice was not recorded. You located it in the hands of the purchasing agent; it was marked *on consignment*.

(3) A packing case containing product costing $816 was standing in the shipping room when the physical inventory was taken. It was not included in the inventory because it was marked *Hold for shipping instructions*. Your investigation revealed that the customer's order was dated Dec. 18, 1956 but that the case was shipped and the customer billed on January 10, 1957. The product was a stock item of your client.

(4) Merchandise received on January 6,

1957 costing $720 was entered in the purchase register on January 7, 1957. The invoice showed shipment was made F.O.B. supplier's warehouse on December 31, 1956. Since it was not on hand at December 31, it was not included in inventory.

(5) A special machine, fabricated to order for a customer, was finished and in the shipping room on December 31, 1956. The customer was billed on that date and the machine excluded from inventory although it was shipped on January 4, 1957.

Assume that each of the amounts is material

a. State whether the merchandise should be included in the client's inventory.
b. Give your reason for your decision on each item in (a) above.

Answer Number 3

(1) a. No.
b. Title did not pass until the merchandise was received, which was after the closing date.

(2) a. No.
b. Merchandise on consignment is the property of the consignor, not the consignee.

(3) a. Yes.
b. Unless we have good reason to believe otherwise, title is not considered to pass until goods have been shipped.

(4) a. Yes.
b. According to terms of the invoice, title passed when goods were shipped by the supplier.

(5) a. No.
b. Goods manufactured to order are considered to become the property of the customer as materials are segregated and work performed, so at completion it may be considered to be property of customer. Care must be exercised to make sure that the sale is recorded in 1956 if machine is to be excluded from inventory at December 31, 1956.

Question Number 4

A new junior on the staff asks you why it is necessary to make any audit of petty cash when both the size of the fund and the total petty cash expenditures for the audit period appear to be immaterial.

How would you answer the junior's question? Give the reasons for your answer.

Answer Number 4

Materiality is seldom the only point to be considered in deciding how much audit work is necessary. Some of the other factors requiring attention are illustrated in this discussion of reasons for the examination of petty cash and petty cash transactions.

It is considered necessary to examine the petty cash balance and related transactions because of the nature of the asset. Cash is readily misappropriated or disbursed for unauthorized purposes. To discover whether unauthorized transactions have taken place as well as to have a deterring influence on such transactions in the future, some attention to petty cash is necessary.

Even if a fund is small, frequent reimbursement may permit a considerable sum to be disbursed through it. Some examination is necessary to discover the extent of petty cash disbursements.

Some examination is also necessary to determine the extent and effectiveness of internal control over petty cash, both to determine the extent of verification necessary and so that suggestions for improvement can be made if desirable.

To avoid the impression that the auditor is unaware of certain possibilities for fraud or error, it is desirable to give some

attention to all areas of enterprise operations in which irregularities are possible.

Large defalcations are sometimes attempted because small ones have been successful. To omit any attempt at discovery of minor irregularities may encourage more substantial efforts.

Question Number 5

Recent proposals would have auditors apply the principles of statistical sampling to auditing. Assuming that the claims made for the principles of statistical sampling as applied to auditing are valid, state the weaknesses of traditional auditing procedures which would be corrected and the improvements in auditing which would result from the application of such principles.

Answer Number 5

It is claimed by those who advocate the application of statistical sampling methods to auditing that:

1. Samples selected by auditors are determined by guess rather than on a scientific basis, so that in some cases more work is done than is necessary and in other cases the extent of work done is insufficient to give reasonable assurance that conclusions based on the sample are or are not valid.

2. In relying on any sample, there is a possibility that conclusions drawn from the sample will not be true of the entire population being tested. Traditional audit practices give no recognition to this possibility. That is, the risk of an erroneous conclusion is not expressed mathematically as a percentage or in any other fashion so the auditor can judge whether the risk is too large or unnecessarily small. Thus, no standards for the optimum size of samples under varying conditions have been established.

3. Regardless of the extent of the sample, audit samples are seldom true random samples because the individual items selected are seldom drawn on a scientific basis that gives every item as good a chance of being selected as any other.

4. Most auditors do not recognize the various types of sampling methods available, such as random, purposive, stratified, sequential, etc., so are unable to apply the method which best suits the needs of the given problem.

5. Finally, many samples are taken because of tradition or habit with no exercise of judgment by the auditor.

The improvements that should result from the adoption of the principles of statistical sampling in auditing include:

1. Economy of work because samples selected would be no larger than necessary.

2. More valid conclusions based on sampling because samples would be selected more intelligently.

3. Less danger in relying on samples because possibilities of erroneous conclusions would be recognized, and samples selected would be large enough to reduce that possibility to an acceptable risk.

4. Ultimately it may be possible to develop standards for sample sizes and types for certain verification problems.

Question Number 6

Your client has entered into an agreement to acquire the machinery and equipment and inventories of another company as of November 30th. The agreement provides that the machinery and equipment will be purchased at a fixed price. The price for the inventories, determined by physical count, will be at the lowest of (1) actual, (2) market, or (3) standard costs. The seller does not maintain a plant ledger, but does keep perpetual records of inventories of raw materials and supplies. Sales and inventories have been priced at standard costs. You will be expected to make an audit as of December 31st.

a. Your client has asked you to advise his chief accountant on the pro-

cedures he should follow as to machinery and equipment and as to inventories in order to properly record the items in the books and make them susceptible to audit. State the advice you would give.

b. State the general auditing procedures you would follow as to these acquisitions on November 30th and December 31st. *You are not to prepare a detailed audit program.*

Answer Number 6

a. Assets purchased should be entered at cost to the purchasing company. To the extent possible, the total cost for each type of asset, machinery and equipment and inventory, should be allocated among the various items within each group. Individual assets acquired should be tagged or otherwise identified, and records should be kept in such a way that the purchased assets can be distinguished from assets owned previously. The contract of purchase and any supporting lists of the property acquired should be preserved.

Inasmuch as no controlling ledger is kept by the selling firm, it may be difficult to find an appropriate basis for allocating the total cost among the various assets purchased. To aid in this task, inquiry should be made by the chief accountant as to the existence of work sheets and depreciation schedules prepared by the seller for income tax purposes, and an effort should be made to determine the types of assets, their estimated lives, depreciation rates, age, and depreciation to date for each asset or group. If this is beyond the capacity of the chief accountant, it may be necessary to obtain expert help. Any identification numbers used by the seller with explanations of their significance should be obtained. If insurance appraisals or other studies that would be helpful in allocating costs among the several assets are available, copies should be obtained.

Detailed inventory records apparently are available. The chief accountant should obtain a breakdown of the items of inventory together with the quantity and applicable price for all items taken over. This is essential to the determination of cost of sales and inventory at the end of the year. The price at which the goods changed hands should be used to record the purchased merchandise regardless of the basis on which that price is determined.

b. At November 30, the auditor has no responsibility as an auditor other than to assure himself that the transaction actually took place and that it is recorded properly. If the client requests, he can take such other steps to protect the client's interests as seem desirable. He should advise the chief accountant to see to it that the November physical inventory is properly taken and to review the pricing methods followed to insure that the terms of the contract are followed. Special care is required in dealing with standard costs and variances from standard to assure that the standards are reliable. The auditor may, if it will facilitate his year-end work, include verification of the existence, condition, description, and classification of the assets taken over at November 30.

At December 31 he should apply to the purchased assets still owned by the client the same procedures he applies to other assets of the same type. For machinery and equipment, this includes a review of the documents supporting the acquisition, a review of the allocation of cost among the several items, a review of depreciation rates and accumulated depreciation, investigation of the accounting for any assets sold or retired, and an investigation of insurance coverage. Because of the nature of the acquisition, care should be taken to assure that all assets purchased are useful to and used by the purchaser. Special attention should be given to the possibility

of obsolete, excess, or special-purpose equipment not useful to the client.

The auditor should be present when the December 31 inventory is taken which should include any of the purchased inventory still on hand. Tests of quantity, price, clerical accuracy of extensions and footings, grade or quality, and investigation of the purchase and sales cut-off should be applied to all inventory on hand. Again, special inquiry and investigation should be made as to the existence of obsolete, slow-moving, or excessive quantities, and if such are discovered, balance sheet valuations should be adjusted accordingly.

If the purchased assets referred to in the problem are the only assets owned by the client, then most of the work referred to here could be done at November 30, and at December 31 it would then be necessary merely to review transactions for the month of December.

Question Number 7

One of your clients is planning to make a loan to a company which is engaged in developing a mining property. Your client wants advice as to the financial information he should obtain before making the loan. He has obtained an engineering report and the prospective borrower has submitted the following balance sheet.

Fixed assets....	$50,000	Liabilities.....	$12,500
		Capital........	37,500
	$50,000		$50,000

a. What information would you expect to obtain from the engineer's report that would be of particular interest in evaluating the merits of the loan?

b. What additional information would you expect the prospective borrower to furnish?

Answer Number 7

a. The engineering report should describe the location, nature, and approximate extent of the ore reserves, both proved and estimated, and should give some indication of the extent to which they have been exhausted. The grade or grades of ore should be given and some approximation of the cost and profitability of extraction in view of current prices. Any special topographical, legal, or other pertinent problems should be mentioned. The nature of the company's title to the land or other right to the ore should be described. A description of the company's mining and transportation equipment and an evaluation of its adequacy should be a part of the report. This would include its general condition and rated out-put. Some attention might be given to the adequacy of the available labor supply, potential markets for the ore, and possible uses of the property on exhaustion of the ore reserves.

b. In addition to the engineers' report, the prospective borrower should furnish information with respect to the cost of the mining property and the method of acquisition, whether discovered, purchased for cash, or acquired for shares of stock. A statement from a reliable source should be supplied relative to title to the property and the status of any property tax claims or other liens.

The nature of the liabilities should be explained including any provisions that might give them a prior claim against the assets. The nature and sources of capital, any un-paid subscriptions, and any special provisions of the capital stock contracts should be described.

If the company has any actual or budgeted figures with respect to production, sales, costs, and profits, these should be supplied. Any labor contracts, sales commitments, option arrangements, and the like should be made known.

The use to which the proposed loan is to be put and plans for repayment should

be given. Credit references, nature of the business organization, personal and profession reputation of management, and any other actual or potential resources of the company should be included.

Group II

Answer both questions in this group

Question Number 8 (Estimated time—30 to 45 minutes)

In connection with a general audit of a manufacturing company, it is necessary to make an examination of ***miscellaneous cash receipts***, as distinguished from ***general receipts***.

State specifically the procedures an auditor should follow to satisfy himself that all cash from the following sources has been received that should have been received.

(1) Interest and dividends on securities owned, and interest on notes receivable.
(2) Amounts received for equipment sold, exchanged, etc.
(3) Proceeds from bank loans.
(4) Refunds of advances for travel expenses.
(5) Refunds of insurance premiums.
(6) Rentals from property owned.
(7) Royalties received.
(8) Sales of scrap.
(9) Sales of capital stock and bond issues.
(10) Sales of securities owned.

Answer Number 8

1. Interest on securities owned and interest on notes receivable should be calculated from the terms of the instruments and traced into the cash receipts book and bank deposits. The length of time the securities were held during the period under examination, interest rates, and interest payment dates should be considered so that interest received reconciles with the securities owned and notes receivable schedules.

Dividends that should have been received on all securities held during the period should be determined from published dividend records, or by correspondence with the company if not reported, and traced into the cash receipts book and bank deposits. Amounts accrued at the balance sheet date should be confirmed.

2. All transactions in which equipment was disposed of during the period should be investigated and any supporting business papers examined. If cash apparently was received it should be traced into the cash receipts book and bank deposits. If substantial amounts of equipment were sold or exchanged and reliable documentary evidence is not available, correspondence with the purchaser may be necessary.

3. All bank loans of record during the period under examination should be traced into the cash receipts book. In addition, bank confirmation forms requesting information with respect to loans outstanding should be sent to all banks with which the company did business during the year. Review of board of directors' minutes, reconciliation of transactions per bank and per books for selected months during the year under examination, and reconciliation of interest expense for the period with outstanding obligations may also uncover unrecorded bank loans.

4. Advances for travel expenses should be accounted for either by (1) confirmation from the holder if still held, (2) examination of expense reports if expended, or (3) by tracing refunds into cash receipts and bank deposits. Any advances outstanding at the beginning of the year or made during the year and not accounted for by confirmation or examination of expense reports should appear as cash receipts. If internal control is satisfactory, the auditor may restrict himself to tests, but the principle remains the same.

5. In preparing a schedule of unexpired

insurance or in reviewing the client's schedule, attention should be given to any policies cancelled or reduced in amount. Where this has taken place, the possibility of a refund should be investigated by reference to agents' statements or correspondence, and any refunds should be traced into cash receipts and bank deposits.

6. In reviewing the property accounts, a determination should be made of any property not used for company activities. If such property exists, investigation should be made of its present use, and if used by others, a copy of the rental agreement or lease should be obtained. These may be confirmed with the leasees if desirable under the specific circumstances. Based on the leases, the rentals that should have been received can be determined and traced into the cash receipts book and bank deposits. Confirm any amounts due but not yet received.

7. An indication that royalty agreements exist may be evident from the nature of the company's business or from actions reported in minutes of board of directors' meetings. If it appears that such agreements are in existence, copies should be called for and examined. The royalty statements submitted by licenses should be obtained and reviewed for propriety. Reported remittances should be traced into cash receipts and bank deposits. If royalties are material, some provision should be made in the agreement for inspection of the licensees' books and records. Reports of such investigations should be called for, reviewed, and necessary action, if any, recommended. Confirm any royalties earned but not received.

8. If production records report approximate amounts of scrap produced, or if other records of scrap produced are maintained, the approximate scrap sales can be computed and checked against recorded proceeds which should be traced into cash receipts and bank deposits. If no records are kept, any documentary evidence available such as weight reports, sales invoices, and remittance advices may serve as an indication of scrap sales. Discuss scrap situation with plant manager or other informed and disinterested party. In some cases, it may be necessary to correspond with selected scrap dealers to determine amounts that should have been reported.

9. All long term debt and capital stock accounts should be analyzed for the year and transactions checked back to minutes of board meetings or reports of transfer agents. Amounts that should have been received should be traced into cash receipts and bank deposits.

10. All transactions in securities owned should be scheduled. Sales of securities should be verified by reference to brokers' advices or other documentary evidence and the stated proceeds traced into cash receipts and bank deposits.

Question Number 9 (Estimated time—30 to 45 minutes)

The Jones Manufacturing Company was incorporated and began business on January 1, 1953. It has been successful and now requires a bank loan for additional working capital to finance expansion. The bank has requested an audited statement for the year ended December 31, 1956. The company has not had an audit made in prior years. You have been retained to examine the financial statements.

The following is the condensed balance sheet as of November 30, 1956:

Cash	$ 20,000
Accounts receivable	30,000
Inventory	300,000
Plant machinery equipment	500,000
Other assets	50,000
	$900,000
Current liabilities	$200,000
Mortgage	300,000
Capital stock: 3,000 shares no par value	300,000
Retained earnings	100,000
	$900,000

Your examination disclosed the following facts:

(1) The company started a job cost system in 1956. Prior to that time no unit costs are available. The inventory includes 100 units of certain finished goods, manufactured prior to January 1, 1956, estimated to cost $50,000 and component parts for an additional 100 units estimated to cost $25,000 in labor, material and overhead. Sales during 1956 were 20 units at $850 each. Management informs you that they overestimated the market for these items but they eventually will recover the cost by sale of the units. However, your investigation discloses that this particular unit has been superseded by a more efficient model and there is reason to question the optimism of management regarding the salability of the units on hand. The inventory value was estimated since no cost records were maintained. You made tests in an effort to establish the validity of the cost estimates, but were unable to do so. The balance of the inventory consists of items manufactured or acquired during 1956. Application of generally accepted auditing procedures established that this portion of the inventory is properly priced at the lower of cost or market on the first-in first-out method.

(2) On June 26, 1956 the Board of Directors granted options to certain officers and employees for the purchase of 500 shares of unissued capital stock at $100 per share. The options may be exercised at any time prior to December 31, 1958. No stock has been issued under these options.

(3) The company entered into a 5-year lease for a warehouse, beginning July 1, 1956, calling for annual rentals of $12,000 payable monthly. The lease also provides for renewal for an additional 5 years at an annual rental of $15,000. The company pays insurance, taxes and maintenance on the property.

a. Do any of these matters require disclosure in the financial statements or qualification of the auditor's opinion? Give reasons for your conclusion in each case.

b. If disclosure or qualification is required, prepare a carefully worded note or qualifying statement for use in your audit report.

Answer Number 9

(1) a. The amount involved in this instance may or may not be material. If all or a major portion of the items in question are unsalable or are grossly over-priced, the resulting loss may almost wipe out the retained earnings and may be so large that an exception or qualification in the opinion may negate the entire opinion. On the other hand, if the probable loss is fairly small, no disclosure may be necessary at all.

If possible, the amount of probable loss should be taken into account in pricing the inventory. If agreement can be reached between the auditor and management, and if there are grounds for believing that the agreed value is soundly based, this presents a satisfactory solution. If management will not accept a writedown or if no reasonable basis for judging realizable value is available, some other solution is required. If the amount involved is considered to be sufficiently material and management will not consent to a write-down or a footnote, it may be necessary to refrain from giving an opinion on the statements as a whole. If management will accept a footnote, it should be a note to both the balance sheet and income statement as the inventory affects both. In any case, the inventory in

the balance sheet should be shown in two parts so the two bases of valuation can be indicated.

b. In the balance sheet the inventory should appear:

Inventory		
At lower of cost (applied on first-in first out basis) or market	$225,000	
At estimated cost	75,000	$300,000

A footnote to the statements would read somewhat as follows:

"Certain items included in inventory at an estimated cost of $75,000, which is lower than recent sales prices, have been superseded by later models and are not currently manufactured or sold in quantities corresponding to those on hand. The ultimately realizable value of these items cannot be estimated at the present time with any degree of accuracy."

The opinion paragraph of the certificate should refer to this footnote as follows:

"In our opinion, subject to the valuation of a portion of the company's inventory referred to in Note—to the Financial Statements, the accompanying balance sheet and statement of income and retained earnings present fairly the financial position of The Jones Manufacturing Company at December 31, 1956 and the results of its operations for the year then ended, in conformity with generally accepted accounting principles."

If management will not accept a footnote, substantially the same wording as that suggested for the footnote could be used for a second paragraph in the auditor's opinion, in which case the reference in the opinion paragraph would be to it rather than to a note to the financial statements.

(2) a. This item requires disclosure which is best accomplished by a footnote to the balance sheet. The amount is sufficiently large to be material and the transaction is of a nature to require disclosure. Transactions between a company and its officers are generally considered to require disclosure.

b. The footnote might read:

"During 1956, options were granted to certain officers and employees for the purchase of 500 shares of the Company's unissued capital stock at a price of $100 a share at any time prior to December 31, 1958. No shares have been issued under these options."

(3) a. An obligation of this type represents a substantial and continuing drain on the company's working capital, and for that reason is of interest to anyone attempting to evaluate the company's financial condition. Disclosure would be accomplished most usefully through a footnote to the balance sheet.

b. The footnote might read:

"On July 1, 1956 the Company entered into a five-year lease agreement for the use of a warehouse at an annual rental of $12,000 plus insurance, taxes, and maintenance. The lease provides for renewal for an additional five-year period at an annual rental of $15,000."

ASSOCIATION NOTES

E. BURL AUSTIN

(EDITOR'S NOTE: Readers of this section are urged to send items eligible for inclusion in these columns to E. Burl Austin, Oklahoma A. and M. College, School of Business, Stillwater, Oklahoma. At intervals a routine request is mailed asking for this information, but readers need not wait for these communications.)

CANADA

Essex College, Assumption University of Windsor

MICHAEL ZIN has been appointed lecturer in accounting.

G. R. HORNE delivered a talk on "Accounting and the Changing Value of the Dollar" to the Windsor Chapter of Certified Public Accountants in October, 1956.

CALIFORNIA

Los Angeles State College

MARY E. MURPHY has been granted leave to accept the appointment of Director of Research, The Institute of Chartered Accountants in Australia.

University of San Francisco

JOSEPH PETER SIMINI has been promoted to the rank of assistant professor.

GEORGIA

University of Georgia

Recent additions to the staff with the rank of assistant professor are: EARL F. DAVIS, ALFRED R. KURTZ, and ROBERT C. WILEY.

THOMAS L. WILLIAMS resigned to become business manager of the Clarke County Athens Consolidated School System.

HAROLD M. HECKMAN gave a series of lectures in March to the Panama Canal Zone employees.

ILLINOIS

Northwestern University

T. LEROY MARTIN was recently appointed acting editor for the magazine *Hospital Management*. MARTIN has been appointed Chairman of the Faculty Intercollegiate Athletic Committee to represent the university in the Western Conference. MARTIN appeared in a round table discussion on the work of the controller.

AMBROSE M. REITER has been elected to a four year term as President of the Village of Skokie.

VIRGIL BOYD attended the *Summer Case Program* at Harvard University.

De Paul University

EDWIN COHEN joined the staff at the university as instructor of accounting. COHEN was formerly a graduate teaching assistant at Michigan State University and more recently was an auditor with the Army Audit Agency, Paris, France Branch Office.

University of Illinois

C. A. MOYER spoke before the Spring meeting of the Southwest Region, American Accounting Association, Dallas. His topic was "Some Common Misconceptions Relating to Accounting Education."

KANSAS

University of Wichita

The university was host in May to the Second Annual Petroleum Accounting Conference.

LOUISIANA

Louisiana State University

LLOYD F. MORRISON has resigned as head of the department of accounting to devote himself to teaching and research.

ROBERT H. VAN VOORHIS assumed the duties of professor of accounting and head of the department. VAN VOORHIS spoke on the internal auditing course before the Southwest Regional Meeting, American Accounting Association, Dallas, Texas.

CLARENCE L. DUNN is serving as president of the Cerebral Palsy Association of Greater Baton Rouge. He is also Director of Publications of the Baton Rouge Chapter of NACA.

ELZY V. MCCOLLOUGH was program chairman of the Fourth Annual Business Section of the 1957 High Speed Computer Conference held on the campus.

JAMES M. OWEN is serving as assistant director of The School of Banking of the South which is sponsored by the State Banking Associations of nine Southern states in cooperation with the university.

JACK J. RICHISON joined the faculty as an instructor in accounting and is also working for a Ph.D.

Tulane University

PAUL V. GRAMBSCH has been made Dean of the School of Business.

ROBERT W. FRENCH, formerly dean, has resigned to become Director of the Port of New Orleans.

MICHIGAN

Michigan State University

E. A. GEE died on March 22.

JAMES D. EDWARDS has been appointed Acting Head of the Accounting Department.

CHARLES LAWRENCE has been promoted to the rank of associate professor.

GARDNER M. JONES spoke at the Louisiana State University Fourth Annual High Speed Computer Conference in March.

LOWELL MUNDON resigned at the end of the winter quarter.

JAMES E. BROWN joined the staff as instructor at the beginning of the spring quarter after a tour of duty in the U. S. Army.

CECIL UPHAM participated in a local television series on the filing of Federal income tax returns.

GARDNER M. JONES participated in a panel discussion at a NACA cost seminar at Battle Creek in April.

B. C. LEMKE, while on sabbatical leave, spoke on accounting theory before the Society of Incorporated Accountants in London, on the impact of electronic computers before the International Congress on Automation in Paris, and on the same subject before the first convention of the London Computer Group in London. More recently, LEMKE addressed the Detroit Chapter of the Institute of Internal Auditors and is now serving as a member of the editorial committee of the official quarterly of the Institute of Internal Auditors.

NEW YORK

Long Island University

HYMAN S. LAUB has been promoted to the rank of associate professor.

MAURICE E. PELOUBET received the distinguished plaque as the honored fellow in accounting for 1957 at the Department of Accounting dinner in April.

PHILIP WOLITZER was honored in May with a plaque from the Accounting Society of Long Island University, for his valuable contributions in accounting education.

St. John Fisher College

ROBERT J. DUPLESSIS has been appointed assistant professor.

Columbia University

G. C. OWENS received his Ph.D. degree in June, 1956 and is now assistant professor of accounting.

WILLIAM C. LINS joined the accounting staff of the Graduate School of Business in September, 1956.

OHIO

Ohio State University

The university was host in May to the Nineteenth Annual Institute on Accounting. The principal speaker was THOMAS H. CARROLL, Vice-President of the Ford Foundation. Other speakers include MARQUIS G. EATON, President of the American Institute of Accountants; RICHARD S. CLAIRE, President of the Illinois Society of CPAs; FRANK P. SMITH, Director of the Bureau of Business Research, University of Michigan; JAMES W. PONTIUS, Consultant, Electronic Data Processing Development with the General Electric Company; J. F. VAN GORDER, U. S. Steel Corporation; JAMES J. MAHON, JR., Tax Editor of the *Journal of Accountancy;* JOHN P. GOEDERT, Partner, Alexander Grant & Company; and ROBERT W. KING, President of the Federal Government Accountants Association.

HOWARD C. GREER was a part time professor of accounting during the spring quarter of 1957, teaching in the Graduate School.

PAUL L. NOBLE has been on leave of absence since the spring quarter of 1957, serving as comptroller of the Ohio Highway Department.

OKLAHOMA

Oklahoma A. and M. College

GEORGE B. MCCOWEN served as Chairman of a section of the program at the spring meeting of the Southwest Region, American Accounting Association, Dallas, Texas. MCCOWEN served as a member of the general program committee for the regional meeting.

University of Tulsa

PAUL J. GRABER served as section chairman at the Southwest Region spring meeting, American Accounting Association, Dallas.

The university was host in April to the Eleventh Annual Conference of Accountants.

RHODE ISLAND

University of Rhode Island

AUSTIN PECK has been engaged part time to teach courses in business law.

MARTIN MELLMAN has resigned as instructor to accept a position with New York University.

DAVID GEFFNER has been granted a sabbatical leave in order to take advanced work in law with the Practicing Law Institute.

W. S. BRIGGS, department head, has been appointed by the governor to serve on the Commission on Federal Social Security Coverage for Members of Public Employees' Retirement Systems, State of Rhode Island.

DORIS LEES has been promoted to the rank of associate professor. On March 28, she addressed the members of the Hospital Credit Association of New England.

TEXAS

Texas A. and M.

The college was host in April to the Tenth Annual Accounting Conference.

THOMAS W. LELAND spoke on the report of the Commission on Standards of education and experience for CPA's at the spring meeting of Southwest Region, American Accounting Association, Dallas.

University of Texas

JOHN ARCH WHITE served as chairman of a section of the program at the Southwest Region meeting, American Accounting Association, Dallas.

JIM G. ASHBURNE spoke on "The Five-Year Program for Accountants, Revisited" at the Dallas meeting.

Abilene Christian College

EARL CLEVENGER was a discussion leader at the spring meeting, Southwest Region, American Accounting Association, Dallas.

BOOK REVIEWS

JAMES S. LANHAM, EDITOR

Accounting

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Accounting

Accounting for Intra-Company Transfers, N.A.C.A. Research Series No. 30, (New York: National Association of Cost Accountants, 1956, pp. 48, $1.00).

This report summarizes the practices of forty leading companies concerning the following topics: (1) Alternative pricing policies for intra-company transfers, (2) considerations underlying the choice of a pricing policy, (3) practical methods for pricing transferred goods and services, (4) techniques used in accounting for intra-company transfers.

Transfer prices may be either market-based or cost-based prices. When profit responsibility is decentralized, market-based pricing is usually chosen while centralized profit responsibility leads to cost-based pricing. Other objectives which also influence transfer pricing are the desire to appraise profitability of integration policy, to strengthen pricing policy with respect to end products sold to outside customers, to save taxes, and to comply with accepted standards in financial reporting.

While this excellent research report usually develops the concepts in general terms, it presents a nice bit of technique, with figures, showing the use of the Inter-plant Transactions Variance account under current standard cost systems. As most of the clerical work involved is not illustrated, it is unfortunate that the list of references at the end of the report does not include the article of H. N. Broom, "Method of Accounting for Inter-departmental Profits." *The Accounting Review*, October 1948, pp. 417–420.

G. H. Newlove
Professor of Accounting

University of Texas
Austin, Texas

Hermon F. Bell, *Retail Merchandise Accounting*, (New York, The Ronald Press Co., 1956. Pp. ix, 473. $12.00).

Retail Merchandise Accounting by Hermon F. Bell is an up-to-date revision of its first edition in 1936. This reviewer always considered this first edition the classic textbook on this highly specialized subject. The new edition follows the basic outline of the earlier book. It retains largely the organization and treatment of a college textbook.

The first few chapters give a systematic approach to the basic philosophy of the Retail Merchandising Method. Terms and methods are described and their applications illustrated by adequate examples. Such illustrations are based on the orthodox department store practices. The experienced reader will draw the implication that the forms and calculations are presented to exemplify a principle and that they will have to be modified to meet varying situations.

Important is the chapter on "Accounting Problems of Retail Method" which discusses the theory of "Averaging Values" on which the retail method is based. It points to some of the fallacies and, sometimes, outright erroneous results. For example, where the method is applied indiscriminately to widely divergent merchandise assortments without proper departmentalization or where extraneous factors such as special promotions or unusual price trends enter the picture, the retail method can arrive at some strange results that could seriously distort management decisions. The chapters on future markdowns, expected losses and the various treatments of discounts further emphasize the need for fully understanding the various alternative solutions before one can decide on the most practical system for a particular store operation.

Unit Control methods are touched on only briefly. There are, of course, many variations of Unit Control methods possible—yet some more specific examples might be desirable in a book that is intended for practical reference. It would seem particularly interesting to learn more about the unit or classification control and "movement" records employed by chain stores. Also, the possibilities of punched card accounting or electronic computers are intriguing, but are mentioned only in passing.

The chapter on "Inventory Taking" offers a rather thorough description of the orthodox department store physical inventory.

The chapters on "Determination of Purchases" and on the "Determination of Net Sales" give a good idea of the many and varied problems connected with department store selling. Some practical approaches are indicated, such as the floor audit used by some stores to overcome the cumbersome old-fashioned sales audit chore. After reading these chapters, the reader may better appreciate why department store expense ratios are so high.

Chapters dealing with Operating Reports and Multiple Store Merchandising give a good review of some prevailing department store practices and also point out the many divergent views in these areas. These widely different approaches and opinions are probably a healthy sign, showing that an industry that at one time showed signs of stagnation is awakening to its problems and its opportunities.

A brief word of caution from the author on the limitations in the use of percentages and the advantages of unit amounts is very much to the point.

The discussion of "Mathematics of Merchandise Accounting" offers a useful resume of some of the principles previously discussed as well as tables and formulas to help solve some of the basic problems. Buyers and merchandisers should find these helpful.

Some typical tax problems confronting retailers are clearly explained, such as those dealing with change over from cost inventory to retail method, or from accrual to installment method.

Up to this point the book has been mostly an updated version of its earlier edition (1936). It's a good solid textbook for accounting students and a handy and comprehensive reference work for the department store accountant or merchandiser. But there is nothing startling presented here in the way of new accounting approaches to aid retail management. No mention is

made of new accounting or financial techniques (such as break-even point analysis, return on investment, or "Economic Order Quantity" formula)—perhaps such things are beyond the scope of this kind of textbook.

The last third of the book encompasses a new phase which merits increasing attention on the part of retail executives, namely LIFO. The formal recognition of LIFO for tax purposes seems of tremendous importance. For the first time formal, hidebound accounting concepts have given way to a more practical and realistic approach to the problem of valuing inventories and, thereby, determining income. To be sure, it has taken a long time and it has been a tough fight. We still do not have the flexibility in inventory valuation methods that would really make possible a more equitable determination of income, undistorted by inflationary or deflationary price fluctuations. What I have in mind is an amendment to the revenue law to permit the combination of LIFO with the Lower-of-cost-or-market principle. Also, the unrealistic results obtained under the presently required treatment of mark-downs should be revised. During the last several years there has probably been less interest in the adoption of LIFO due to a somewhat more stable price situation. But the long range trend in this and other countries forebodes the danger of at least a creeping inflation. Thus it will behoove executives to take another close look at the possible advantages of LIFO.

The author sketches the history leading to the adoption of LIFO, well documented with case references. He emphasizes the grave consequences of the election of LIFO for tax purposes—a fateful decision that cannot be altered except by permission of the commissioner;—a permission which might be difficult to obtain during a period of acute deflation.

As anyone knows who has had practical experience with LIFO, the innumerable details are highly intricate and often confusing. The author, first of all, explains index numbers and their use in LIFO calculations. He presents various types of LIFO worksheets fully indexed and explained in great detail. Finally, he takes the reader by the hand and guides him step by step through a maze of detail calculations of the LIFO inventory of the X Company. By taking the trouble of following each step through the worksheets and verifying the computations, even a novice should gain a good understanding of the principles involved and a good working knowledge of some typical methods used in LIFO.

While most of the explanations and examples deal with LIFO problems under the retail method of accounting there also follows a thorough and clear outline of the "Dollar Value" LIFO method. The problem of involuntary conversion is also covered quite adequately.

Lastly there is an informative discussion on several important LIFO court cases. These court cases are important because of the highly confused situation brought about by the Treasury's inconsistent attitude on LIFO problems. There may be a ray of hope in the liberalization of some regulations which allow a more practical approach.

Conclusion: The up-to-date version of this book and, particularly, the addition of the LIFO chapters fill a real need. Here is good solid fare—a must for every student of department store accounting, and a very useful book for others who are concerned with retailing problems.

HERBERT RETZLAFF
Vice President and Controller

Fred Meyer, Inc.
Portland, Oregon

Bookkeeping Procedures and Business Practices for Small Hospitals (Section 2, Handbook on Accounting, Statistics and Business Office Procedures for Hospitals) (Chicago: American Hospital Association, 1956, pp. 170. Price not given).

This sequel to the AHA's well-known 1950 *Handbook* is an adaptation to small hospitals (defined as up to approximately 100 beds) of the same general principles and procedures. Developed under the auspices of two Association committees, its official purpose, or so we infer, is to promote greater uniformity in accounting and reporting within this hospital class and a resultant improved comparability of financial information. Space-wise this is primarily an accounting manual. Twelve chapters and four coded check lists (of supplies, expenses and equipment) in the appendix are devoted to accounting and financial reporting and comprise 130 pages of the 170-page total. Three chapters treat of business practices: "Credit and Collections," "Purchasing, Receiving and Stores," and "Statistics."

The manual has chosen what, in the reviewer's opinion, is the best approach to accounting uniformity and improved comparability of reports. No single bookkeeping system is illustrated or recommended. The desired goal rather is to be achieved by the adoption of uniform principles of accounting, standard funds or fund groups, a standard but flexible chart of accounts, and uniform definitions or descriptions of the uses to be made of each account category. Within this basic framework, which is well presented, the manual contemplates that procedures will vary; therefore, alternative methods and practices are discussed and illustrated. The abundance of forms and illustrations (82 in number) constitutes one of the good features of this handbook, and with the aid of flow charts and text references, they have been made an integral part of the text discussion. Debit and credit entries and sample "T" accounts are introduced sparingly.

Hospital administrators, and members of governing boards with even an elementary knowledge of accounting, should be able to follow the accounting chapters without difficulty. Probably, the most immediate use of the manual will be by those responsible for keeping hospital accounts, and the public accountant who installs systems for small hospitals.

It is to be hoped that a subsequent volume in this handbook series will adopt strictly the managerial approach to hospital accounting and present materials oriented to many of management's specific problems, supplemented by illustrative case histories of how the hospital administrator can make the most effective use of all types of data produced by general financial accounts, cost accounts, cost analyses and statistical records. Training materials for the hospital administrator

in this phase of management are needed and are in demand.

A. M. Hillhouse
Professor of Public Administration
Graduate School of Business and Public Administration
Cornell University

John L. Carey, *Professional Ethics of Certified Public Accountants*, (New York; American Institute of Accountants, 1956, xiii, 233 pp. Price Cloth $4.00, Paper $3.00).

John L. Carey, Executive Director of the American Institute of Accountants, has done an excellent job of writing and has made another worthwhile contribution to the accounting profession. The sincerity of the author and his genuine interest in the profession are apparent in every section of the book. As indicated in a "disclaimer," the American Institute accepts no responsibility for the contents; the opinions expressed are those of the author alone. This freedom is fortunate, because the book is enriched by the author's willingness to explore the unresolved and complicated ethical matters associated with today's expanding accounting profession. Thus, the book is not only a reference manual, but a stimulant to creative thinking about a subject that must receive the continued attention of all members of the profession. It is without question recommended reading for accounting students planning to enter the profession.

The work is organized as follows: Part One is concerned with fundamental principles of professional ethics; Part Two is devoted to ethical questions which arise in the major areas of professional accounting practice; Part Three deals with ethical responsibilities to other people.

The author justifies the usefulness of professional ethics in the following words:

"1. They show the practitioner how to maintain a professional attitude which experience indicates will help him to succeed.
2. They give clients and potential clients a basis for confidence that CPAs sincerely desire to serve them well, and place service ahead of reward.
3. They give third parties who may rely on financial statements a basis for confidence that the CPA has done his work in conformity with objective standards, and is independent in expressing his opinion."

Although it is necessary occasionally to conclude a discussion by mentioning that the question is still under study, there is no tendency to avoid "tough" problems. For instance, take the matter of referrals. Carey notes the prevailing reluctance on the part of certified public accountants to refer their clients' problems to specialists within their own profession. His position on this matter is evident from the following quotation from page 143: "While the reasons for this attitude are understandable, it may, if it persists, retard the potential development of the profession as a whole. If CPAs are unwilling to call in fellow practitioners to help with problems requiring specialized knowledge, the clients may be forced to go outside the accounting profession for assistance which CPA specialists may be as well qualified, or in some cases, better qualified, to give. Even worse, a client may be shut off from needed service available from within the accounting profession, by the reluctance of the certified public accountants retained by them to point out problems whose solution might require the collaboration of a specialist." He observes elsewhere that perhaps it would be well to have a specific rule of conduct on this subject, prohibiting a certified public accountant called in as a specialist from accepting any professional work formerly performed by the CPA who had recommended the specialist, except with the consent of the original CPA.

There is an excellent discussion of the many ramifications associated with the growing practice of rendering management or special services to audit clients. Some accountants, including the reviewer, are concerned as to whether the certified public accountant's independence as auditor might not be jeopardized should accounting firms pursue, to an increasing extent, the dual roles of auditor and servant to management. The author's opinion on this matter is indicated by the following quotation: "If a certified public accountant limits his 'management service' to technical work and recommendations or advice to clients, pointing out alternative courses and their consequences, but leaving the final decision to the management, it does not seem that his objectivity as independent auditor of the accounts of the same business enterprise need be adversely affected." But ethical questions other than independence are involved. Since this is a relatively new field of activity, how do the profession and the firms inform the business community that such extended services are available? How about the preparation and distribution of promotional material? The author indicates that most of the firms which have prepared promotional material about their management services would not dream of doing the same thing to describe their auditing, accounting and tax services. He cautions that to undertake management services as a "business" while simultaneously carrying on an accounting practice as a "profession" would undoubtedly create confusion and would dilute the prestige of the certified public accountant in both fields.

The concluding chapter deserves special commendation for its profound and mature philosophical evaluation of the essence of a profession's code of ethics. As noted therein, rules of professional conduct are a composite of idealism, morality, social psychology, etiquette, and public relations. Admittedly, such rules are complex, inexact, incomplete, and often difficult to apply to specific situations. But let no one be discouraged by this state of affairs. The author concludes that "the only ground for discouragement is a tendency on the part of some professional practitioners to ignore the practical importance of the rules of conduct—to brush them aside as 'preaching' remote from the realities of life. . . . There is no more vivid reality for any human being than his relations with other people."

Herbert E. Miller
Professor of Accounting
University of Michigan

Samuel R. Hepworth, *Reporting Foreign Operations* (Ann Arbor: Bureau of Business Research, School of Business Administration, University of Michigan, 1956, pp. v, 207, $3.50).

This book is a valuable and important contribution to the theory and technique of reporting the operations and financial condition of foreign subsidiaries. In view of the tremendous growth of United States foreign investment over the last half century and the impact of foreign governmental exchange controls and regulation of international financial transactions, the subject matter is one which has long deserved a penetrating study such as this. Most of the standard text-books and literature in this field have been traditionally based on concepts geared to the now outmoded conditions of international finance which prevailed before World War I, such as the gold standard, free movement of exchange rates, and unrestricted convertibility of currencies. In the opinion of this reviewer, the author successfully challenges, both from a theoretical and from a practical point of view, various prevailing concepts, including some pronouncements of the American Institute of Accountants, and presents convincing analyses in support of his arguments.

The first six chapters deal successively with (1) translation of balance sheet accounts, (2) translation of revenue and expense accounts, (3) exchange gain or loss, (4) the impact of government control of foreign exchange and exchange rates, (5) devaluation, and (6) the inclusion of foreign subsidiaries in consolidated financial statements. The seventh and final chapter contains a summary and conclusions.

Chapter 1 deals with the need for translation of foreign accounts, the conditions rendering such translation desirable or undesirable, the basic criteria for such translation, and the application of these criteria to specific balance sheet accounts—viz., cash, temporary investments, receivables, inventories, fixed assets, current liabilities, long-term liabilities, capital stock, and surplus. The author challenges the correctness of the hitherto prevailing practice of translating all current items at current rates and all non-current items at historical rates. In its stead he presents convincing arguments for the classification of balance sheet items as to "money-value" items (those representing a right to receive, or obligation to pay, a fixed number of foreign currency units) and "non-money-value" items (those whose ultimate value may vary in terms of the foreign currency unit), and for the application of current rates to the former category as against historical rates to the latter. For instance, though receivables and inventories are both classed as current assets, the latter is a "non-money-value" item to which the current rate does not necessarily apply; and all liabilities, whether short-term or long-term, being "money-value" items, should be translated at the current rate. With respect to temporary investments and inventories, Chapter 1 presents some hypothetical figures illustrating the combined effect of changing market or net realizable values and of changing exchange rates, and the necessity for analyzing net changes in the translated value of such assets as to the increases or decreases due to these separate factors.

Chapter 2 deals with the techniques of translating revenue and expense accounts. The author points out that the net profit or loss of a foreign subsidiary is necessarily equal to the difference between its opening and closing net assets, and that correct theory as well as the proper placement of managerial responsibility requires the accurate analysis of this difference as between profit or loss from ordinary business operations and gain or loss from exchange rate movements. Next he describes and illustrates with figures the various methods commonly employed for translating revenue and expense accounts (e.g., average prevailing rate, average remittance rate, month-end rate, closing rate, and combination remittance and closing rate). In this connection he points out that, since aggregate net profit may be determined by comparing opening and closing net asset balances, and since the profit or loss from ordinary business operations varies according to the particular translation method used, the residual exchange gain or loss traditionally represents merely a plugged figure rather than a correct measure of the results of exchange rate movements. Having illustrated some of the fallacies inherent in commonly employed translation techniques, the author proceeds to state the criteria and objectives which should givern the translation of revenue and expense accounts (other than depreciation and amortization). These are (1) to reflect dollar equivalents substantially equal to those based on the exchange rate prevailing at the time of each individual transaction, and (2) to reflect an exchange gain or loss which measures the effect of exchange rate movements upon the dollar value of foreign currency "money-value" assets and liabilities. In line with these objectives, the author describes the correct procedures applicable to the translation of revenue and out-of-pocket expense accounts, as well as special considerations applicable to the translation of depreciation and amortization and of dividends. The chapter closes with an analytical evaluation of currently employed methods in terms of the aforementioned criteria and objectives.

Chapter 3 begins by pointing out the analogy between the author's concept of exchange gain or loss, as applied to foreign subsidiaries, and the phenomenon of changes in the internal price level, as applied to domestic companies. Thence the author proceeds to present cogent arguments as to the unsoundness of attempting to distinguish between realized and unrealized exchange gain or loss. He then discusses the proper treatment of exchange gain or loss for accounting and reporting purposes under various conditions. A large part of the chapter is devoted to a detailed practical illustration of the theoretically correct translation process, including the development of balance sheet and income statement figures from a complete set of hypothetical transactions. The resultant net exchange loss is then analyzed as to losses and gains, respectively, due to decreases, caused by exchange rate movements, in the value of foreign currency "money-value" assets and liabilities, and these decreases are proved by individual analysis. The presentation illustrates some significant relationships from a managerial point of view, such as the use of outstanding liabilities as a hedge against the effect of fluctuating exchange rates on the value of "money-value" assets.

In order to highlight the superiority of the translation method advocated, the author compares its results with the demonstrably indefensible results obtained by the application of two other commonly accepted methods to the same set of hypothetical figures. One of these methods is shown to produce a much larger reported exchange loss while the other produces a correspondingly large reported exchange gain, neither of which accurately reflects the true results of exchange rate movements. The chapter concludes by pointing out the interesting fact that it is possible in some circumstances for a foreign currency balance sheet to show a credit balance in the retained earnings account while the same balance sheet translated into dollars shows a negative retained earnings figure, thus indicating that dividends have in reality been paid out of capital.

Chapter 4 describes the various forms and purposes of exchange controls, surveys briefly their historical development, and summarizes typical control procedures in effect in the United Kingdom, France, Sweden, and Brazil. This is followed by a discussion of multiple exchange rates, the Brazilian system being cited as an illustration and compared with the Israeli system. The author then considers the question whether and to what extent restrictions on currency convertibility for the purpose of repatriating capital or earnings render inappropriate the translation of foreign currency accounts. In accordance with the going concern concept and the analogy of domestic situations involving legal restrictions on the payment of dividends out of capital as well as occasional contractual limitations on the availability of earnings for dividends, the author concludes that there is no reason for failure to translate foreign currency accounts in the absence of a drastic deterioration of trade and financial relations with the country involved. Lastly, the author discusses the relative propriety, under a multiple exchange rate system, of the use of commodity rates or financial rates for the translation of foreign currency accounts, and cites his reasons for favoring the latter on balance.

Chapter 5 defines the meaning of devaluation and explains the wide variety of reasons and motives which may underlie its use as an instrument of financial policy. In discussing its effect upon the translation of specific real and nominal accounts, the author argues that devaluation is tantamount to adoption of a new foreign currency unit, and therefore concludes that post-devaluation rates should in general be applied to all foreign currency assets and liabilities, pre-devaluation rates being used only to translate current period revenues and expenses earned or incurred prior to the devaluation. From this it follows that the devaluation loss is measured by the related decline in dollar value of all foreign currency net assets. Particular discussion is devoted to the theory underlying the application of post-devaluation rates to plant assets, and the validity of a possible alternative view requiring an upward adjustment of the foreign currency value of plant assets is scrutinized. Consideration is also given to the problem of assigning the devaluation loss as between capital and retained earnings, and to the question whether it should be charged to income or directly to retained earnings in the accounts of the domestic parent company. The chapter concludes with an illustration of the impact of devaluation on the translation of foreign currency accounts, based on a hypothetical set of figures.

Chapter 6 explores the nature and significance of consolidated financial statements and concludes that their meaningfulness is limited largely to management and long-term investors and that they should be considered as supplements to, rather than substitutes for, financial statements of the individual companies in the consolidated group. Their supplementary nature being granted, the author reasons that the same general criteria governing the consolidation of domestic subsidiaries should be applied to foreign subsidiaries—i.e., the existence of common control and of reasonable homogeneity of operations. The meaning of these criteria is examined at some length, and special circumstances affecting their application in the foreign field are considered. Various types of foreign governmental restrictions are discussed from the standpoint of their effect upon the exercise of operating control—e.g., requirements as to extent of foreign representation among owners and directors, restrictions on convertibility of foreign currency, and import or export quotas or prohibitions. The author concludes that consolidation of foreign subsidiaries is appropriate in the general case, and that their exclusion is warranted only where lack of effective control or of adequate homogeneity of operations can be clearly demonstrated. Various special problems relating to the consolidation of foreign subsidiaries are discussed, and various techniques employed in published financial reports of American corporations are examined and illustrated. Special attention is also given to the theoretical and practical aspects of recognizing liability for future United States income taxes on current unremitted earnings of foreign subsidiaries—a problem which exists in situations where the foreign tax rate is materially lower than the United States rate.

The book as a whole is interesting, informative, and thought-provoking. The author's extensive knowledge and excellent theoretical and analytical insight have combined to render this work a valuable one both to practical businessmen and to students of accounting theory.

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RALPH COUGHENOUR JONES, *Price Level Changes and Financial Statements—Case Studies of Four Companies* (Columbus: American Accounting Association, 1956, pp. x, 182, $3.00).

This is the second publication in a series prepared in connection with the research project sponsored by the American Accounting Association and financed by the Merrill Foundation for the Advancement of Financial Knowledge. The public accounting firms Arthur Andersen & Co., Lybrand, Ross Bros. & Montgomery, and Peat, Marwick, Mitchell & Co., cooperated in conducting the study. Professor Jones was also assisted by David Lindsey and Perry Mason.

The objectives of the research project, as set forth by the authors, were as follows:

(1) "To develop and test techniques and methods for the preparation of supplementary financial statements expressed in constant value units, that is, in dollars of uniform purchasing power measured by a general index of prices.

(2) "To compare the supplementary statements expressed in uniform dollars with the conventional statements expressed in historical dollars in order to measure the effect of inflation on companies of various types and sizes, and to determine the extent to which the conventional financial statements have been affected by the use of an unstable unit of measurement.

(3) "To present quantitative data which will give business management, individual accountants, committees of accounting associations, and governmental bodies some basis for judging the need for and the usefulness of figures and statements in dollars of uniform purchasing power."

The study was conducted in a manner consistent with the basic recommendations of the American Accounting Association's Committee on Accounting Concepts and Standards with the specifications of that Committee's Supplementary Statement No. 2. The data for the study were drawn from the books and records of Armstrong Cork Company of Lancaster, Pennsylvania, the New York Telephone Company, The Reece Corporation of Waltham, Massachusetts, and Sargent & Company of New Haven, Connecticut, for respective periods of years. In the case of Sargent & Company both a deflationary and inflationary period were included. In the other cases the period covered was mainly inflationary.

The dollar of December, 1951, was chosen as standard. The Consumers Price Index of the United States Bureau of Labor Statistics was selected for purposes of converting the actual money experiences to a common dollar basis. Multipliers representing the respective purchasing powers of the dollars of the included years, related to the December, 1951, dollar, constituted the conversion media. These were applied to the pertinent figures in the historical statements. For this purpose many of the fixed asset items were subjected to an aging analysis. The money items—cash, receivables, and debts—were assumed to adjust automatically to the dollar value prevailing at the close of each period.

Below is a summary of some of the more important highlights produced by the study.

Professor Jones terminates the presentation of the company studies with the following general conclusions:

(1) "The substantial inflation which has cut the purchasing power of the dollar by about half since 1940 has considerably impaired the usefulness of financial statements based entirely on historical costs.

(2) "The conversion of financial statements into uniform current dollars is not a departure from the cost basis of accounting but is rather a recognition of the well-established fact that the basic unit of measurement, the dollar, has changed in value.

(3) "The major discrepancy between net income reported on an historical basis and net income computed in current dollars arises from the difference between depreciation on original cost in historical dollars and depreciation on that sam

	New York Telephone Co.	*Armstrong Cork Company*	*The Reece Corporation*	*Sargent & Company*
Return on Investment	*1946–1952* Book Figures 6% Adjusted Figures 3%	*1941–1951* Book Figures 8.8% Adjusted Figures 4.5%	*1941–1951* Book Figures 8.1% Adjusted Figures 4.9%	The reported rate in 1947—the high point was 13%, the adjusted rate 6%.
Excess of Book Income over Adjusted Income	*1947–1952* 50%	*1941–1951* $33 million	*1940–1951* Booked net income 10% of gross income. Adjusted net income 6% of gross income.	*1941–1952* Net income in adjusted dollars less than ½ as large as booked net income.
Comparative Income Tax Experience	*1946–1952* Rate on nominal $ basis............40.6% Rate on adjusted $ basis............52.3%	*1941–1951* Rate on nominal $ basis..............47% Rate on adjusted $ basis..............58%	*1940–1951* Rate on nominal $ basis..............57% Rate on adjusted $ basis..............67%	*1941–1952* Adjusted $ rate approximately 50% higher than the nominal $ rate.
Depreciation Experience	*1946–1952* Adjusted $ computations showed depreciation to be understated by $108 million.	*1941–1951* Adjusted $ computations showed depreciation to be understated by $15.43 million.	*1940–1951* The depreciation charges were deficient by 22% of the booked charges, or 18% of the adjusted depreciation	*1941–1952* The depreciation charges were nearly $1,000,000 short of the amount which the adjusted figures showed to be required.
Dividend Experience	*1947–1952* The book figures show 98.8% of income to have been distributed. The adjusted figures show 169% of income to have been distributed.	*1941–1952* The book figures show 56% of income to have been distributed. The adjusted figures show 89% of income to have been distributed.	*1940–1951* The book figures show 67% of income to have been distributed. The adjusted figures show 108% of income to have been distributed.	*1941–1952* The book figures show 35% of income to have been distributed. The adjusted figures show 119% of income to have been distributed.
Purchasing Power Gains and Losses	*1947–1952* Ordinary accounting procedures failed to show a purchasing power gain of $71.8 million.	*1941–1951* Ordinary accounting procedures failed to show a purchasing power gain of $2,681,000.	*1948–1951* Ordinary accounting procedures failed to show a $30,000 purchasing power loss absorbed by the common stockholders.	*1941–1952* Ordinary accounting procedures failed to show a $510,000 purchasing power loss absorbed by the common stockholders.

original cost measured in current dollars of substantially less purchasing power.

(4) "The current economic cost of property exhaustion is not affected by the fact that fixed-dollar obligations such as funded debt and preferred stock form part of the financial structure.

(5) "The limitation of depreciation deductions for income tax purposes to original cost in historical dollars raises real rates of taxation well above statutory rates during and after periods of inflation and thereby discriminates against industries having heavy plant investments.

(6) "The book earning rates of a utility company have little, if any, relevance to the problem of determining the point at which excessive earnings or monopoly profits begin unless they are compared with rates currently earned in unregulated industries rather than with some preconceived standard such as 6 per cent or 8 per cent a year.

(7) "A fall in the value of the dollar produces no immediate gain on the principal of debts or the face value of outstanding preferred stocks. The reduction in the real burden of interest and preferred dividend charges which accompanies a fall in the value of the dollar does constitute an immediate benefit to a corporation and its common stockholders.

(8) "It is highly unrealistic to assume that investors and others now realize or can ascertain for themselves that as a result of inflation a substantial part of reported earnings based on historical dollars may in fact represent a return of economic capital invested in the enterprise."

Critique and Evaluation of the Study:

Price Level Changes And Financial Statements—Case Studies Of Four Companies is a significant addition to the literature dealing with the accounting effects of shifting dollar values. The individuals who conducted the study deserve a great deal of commendation. The research project demonstrates the fact that the accounting problems associated with shifting dollar values are capable of solution. It is to be hoped that as a result accountants will hereafter be influenced to provide analytical information respecting the effects of shifting price levels upon the business profit experience. Such analyses would give the readers of accounting statements data of considerable importance to the making of judgmental decisions.

The authors of *Case Studies of Four Companies* clearly visualized the accounting problems involved in the experience of shifting dollar values as phases of the historical process. Nevertheless, the terms "economic" and "current value" are used in spots as though they are consistent with adjusted dollar amounts. These terms make no contribution towards dispelling the confusion that so often exists in accountants' minds in this respect. Generally, the terms economic and current value mean present-day replacement value rather than adjusted historical dollar cost. Historical accounting procedures, in the main, take up as income only realized income; economists generally make no distinction between realized and unrealized income. Following are selected illustrations of this error:

(1) Page 1. In referring to proposed solutions to the accounting phases of the price-level problem it is stated that "One is to work out methods of reconciling and presenting both monetary and economic results in one set of statements." What is meant, presumably, is monetary and adjusted dollar results.

(2) Page 17. "There are two principal reasons why this economic or adjusted earning rate is only half as high as that shown by the historical or book figures." The adjusted earning rate is not necessarily the economic earning rate.

(3) Page 34. "The depreciation deficiency accounts for about 90% of the excess of book income over economic income." Actually, the excess referred to is an excess over adjusted dollar income.

(4) Page 52. ". . . it is evident that the drop in real earnings has been due entirely to the setting of rates and the levying of income taxes in terms of historical dollar costs rather than in real or current costs." It is clear that the author means adjusted dollar costs rather than current costs.

(5) Page 177. "The current economic cost of property exhaustion is not affected by the fact that fixed-dollar obligations such as funded debt and preferred stock form part of the financial structure." Presumably what is meant is the adjusted dollar cost of property exhaustion is not thereby affected.

Because of the confusion existing as respects the adjusted-dollar, economic aspects of the price level problem, those who deal with it on the adjusted dollar basis should, like Caesar's wife, make every effort to keep themselves above reproach.

A second item with which this reviewer takes issue is the researchers' failure to compute and exhibit realized purchasing power gains and losses as a profit or loss determination item. They consistently netted these items against unrealized gains and losses and treated the result as a capital adjustment amount. The arguments presented to support this procedure appear to be more rationalizations than reasons. The following are illustrative:

(1) "All changes in the purchasing power of fixed-dollar obligations and other monetary items have in this study been treated as capital adjustments and no distinction has been made between realized and unrealized portions. It is commonly assumed that such purchasing power gains and losses, at least to the extent that they are finally realized, should be shown as income to the corporation or the common stock. It is not feasible at this point to go into the technical problems involved, but enough has been said to show how little current benefit there is in unrealized gains on permanent debt and how dim are the prospects of ultimate realization. It is, moreover, no simple matter to determine just when a gain is finally realized." (pp. 38–39)

(2) "They [purchasing power gains and losses] have been excluded from income and shown as capital

adjustments in this study, partly because no comparable item appears on conventional income statements and partly because the proper computation and placement of such losses requires information which can be obtained only by the financial officers of the Company." (pp. 79–80)

(3) "They [purchasing power gains and losses] do not . . . correspond to the usual concept of realized losses and gains. It is possible that they will be offset by purchasing power gains if the price level turns downward before the cash is spent or the liabilities paid, so the election has been made to treat them as capital adjustments." (pp. 127–128)

(4) "Some authorities feel that . . . net purchasing power gains or losses should be deducted on the income statement before arriving at income available for dividends. Others prefer to treat them as capital adjustments. The latter was done in this report." (pp. 164–165)

Succinctly stated the reasons set forth for treating realized purchasing power gains and losses as capital adjustment items may be summarized as follows: (1) Realized purchasing power gains and losses are difficult to determine; (2) there are no comparable items in conventional income statements; (3) realized purchasing power gains and losses do not correspond to the ordinary concept of realized gains and losses; and (4) it is possible that in the long run purchasing power gains and losses may be cancelled out by price movements in the opposite direction. The price-level problem, however, is a totality. Consistent treatment of its effects therefore appear to be required. Difficulty in determining and properly allocating its effects is not excuse for neglecting them since without their computation the appearance of the whole can be misleading. The fact that there are no items in the ordinary income statement like unto purchasing power gains and losses and that they do not fit into the ordinary concept of realized gains and losses is immaterial. The research project itself was not devoted to phenomena ordinarily accepted as justly within the accountant's jurisdiction. On the basis of the reasoning set forth the research project would appear to be nullified. Further, as generally practiced, accounting is geared to the presentation of limited period effects. The stock holdings in many corporations are subject to considerable turnover. Equity as between the respective buyers and sellers is frequently related to short period accomplishments. The possible long run balancing of gains and losses would therefore not appear to negate the desirability of their short run recognition. If the accountant were to approach the income measurement problem on the basis of possible long run balancing effects most operating losses would probably fail to be exhibited. In failing to meet the purchasing power gain and loss issue specifically the research project would appear to leave something lacking, especially since the study itself recognized purchasing power gains and losses to be "... as significant or real as any other price level adjustments. . . ." (p. 127)

The *obiter dicta* associated with the arguments presented to support the handling of purchasing power gains and losses on money items in the case of the New York Telephone Company come close to suggesting that the purchasing power correction process is not fully applicable to a public utility. It is indicated that debt constitutes approximately 40% of the Company's capital structure. While it is contended that the purchasing power corrective process is applicable to the determination of depreciation and other revenue costs, its application to long term debts is questioned. It is held that capital requirements make long term debt a permanent part of the utility's capital structure; therefore, as a practical matter the purchasing power gains and losses applicable to it are either never realized, or, in the long run, cancel out. The argument seems to indicate that the long term debt should be viewed solely in money terms. Since assets are representations of the capital investments it is difficult to see the logic in a position which holds a portion of the capital structure to be interpretable in money terms only while at the same time denying the proper application of money interpretation to a corresponding portion of the assets. Both exist in the same environment. In competitive situations the market balances the debt-asset influences. It is doubtful that a public utility can justly be allowed to have its cake and eat it too, despite the assertion (p. 177) that "The current economic cost of property exhaustion is not affected by the fact that fixed-dollar obligations such as funded debt and preferred stock form part of the financial structure." From a regulation point of view if a public utility is not to be required to balance its debt purchasing power gains against the losses or reduced profit measurements resulting from expense adjustments made to compensate for changes in the value of the dollar, it does not seem unreasonable to view the public utility's customers as the proper beneficiaries of the debtor's purchasing power losses. As stated above, the purchasing power problem is a whole. Equity is not to be obtained from its partial treatment. In the last analysis the purchasing power problem is a common stock equity problem whether the business be a regulated or unregulated activity. The net effect thereupon is the consideration of basic importance.

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I. Wayne Keller, ***Management Accounting for Profit Control***, (New York: McGraw-Hill Book Company, Inc., 1957, pp. viii, 435, Price $7.00).

Any text which attempts to concentrate on the managerial usefulness of accounting data and procedures should be greeted warmly, and a text prepared by a thoughtful accounting executive on the foundation of long practical experience is to be doubly welcomed.

This book by the Controller of Armstrong Cork Company covers, in varying degrees, most of the topics with which the accounting executive must deal. Cost accounting, budgeting, control techniques, and decision analysis are all included, and there are chapters on internal profit measurement, intracompany transfer pricing, and various aspects of capital expenditure management. Budg-

ets and control techniques are allotted more space than in most texts, whereas cost accounting in the narrow sense of the term takes up only about one-third of the book. The entire presentation is made more effective by an integrated series of illustrations drawn from situations that might be met by a hypothetical fiberboard manufacturer.

This is a frankly partisan book. The author is not afraid to take a stand on controversial questions, and this attitude serves to stimulate reader interest, although in several places it results in a less-than-adequate treatment of alternative concepts and techniques. The section on budgetary control, which discusses budgetary procedures and the ways in which the various components of a budgetary control program fit together, is particularly strong, although the presentation could have been improved by a reorganization of material and by a somewhat fuller discussion of factory overhead budgets.

The principal strengths and weaknesses of this book stem from its stated objectives. The preface states, "The purpose of this book is to present an interrelated system of accounting, controlling, and reporting . . . to complement the student's accounting and management courses and show how they are related," and this objective is reasonably well met. A collateral purpose, however, is "to show the opportunities for the managerial accountant to contribute to, and participate in, the profitable operation of his company," and the book falls short of this second goal, perhaps for the very reason it succeeds in reaching the first. The problem is that it sacrifices depth of analysis to breadth of coverage. This would not be a serious objection if the book were aimed at non-accounting executives or beginning students of accounting, but this is intended to be an advanced book for readers with some previous training in management accounting and for this audience a more intensive coverage is desirable.

The lack of depth is felt most keenly in the portions of the book dealing with decision analysis. Nowhere does the author stop and outline a consistent framework and set of principles for analysis, with the result that the analytical tools he supplies are likely to be incorrectly applied. The chapter on distribution costs goes farther in this direction than any other, but even there the basic pattern of analysis does not come through clearly enough to permit full application.

The shortcomings of the broad coverage approach of this book affect its usefulness in two different ways. Whereas the chapters on cost accounting would probably prove confusing to students who have not been previously exposed to the subject, the chapters on internal profit measurement, transfer pricing, and capital management do little more than serve as an introduction to these topics. In view of the wide area to be covered this is perhaps not surprising, but it is unfortunate that much recent progress in these areas is not reflected here. In capital analysis, for example, no distinction is made between sunk and incremental costs, nor is any mention made of the time-discounting techniques that have been incorporated in much of the recent literature in this field. Furthermore, one of the key problems in capital expenditure management, the development of minimum acceptable rates of return, is passed over very lightly despite the amount of public discussion it has been receiving in recent years.

These criticisms are not intended to imply that the book is without merit. In chapter after chapter the author presents material that is both useful and challenging, as in the chapter on break-even analysis which is delightfully irreverent toward the conventional break-even model. To cite one more example, the discussion of by-product costing benefits from a strong slant in the direction of the usefulness of this cost information for decision-making, which represents a refreshing change from most discussions of this topic. At the least, this book can provide a stimulating basis for discussion and, although the readers may not agree with everything the author has to say, most of them will find large portions of this book rewarding reading.

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Perry Mason, *Price-Level Changes And Financial Statements—Basic Concepts and Methods* (Columbus: American Accounting Association, 1956, pp. iv, 28, 50 cents).

This pamphlet is the first in a series prepared in connection with a research project sponsored by the American Accounting Association and financed by the Merrill Foundation for the Advancement of Financial Knowledge. Differences of opinion have long existed among accountants respecting the desirability of correcting financial statements for changes in dollar meaning resulting from modifications of the price level. The sponsored research project was designed to test index number correction of changed dollar meaning figures, to seek out the problems therein involved, and to evaluate the corrected results.

Basic Concepts And Methods was written primarily for those not familiar with the accounting nature of the price-level problem. The treatment is brief but adequate; it is both simply and clearly presented. The following topics are taken up in order: nature of the price level; measuring the price level; purchasing power of the dollar; expressing the purchasing power of the dollar; types and examples of price indices; effect of inflation and deflation upon the individual; effect of inflation and deflation upon a business; what to do about the problem; how to make corrective adjustments; nature of purchasing power gains and losses; analysis of changes in stockholders' equity; interpretation of adjusted statements; adjusted income statement in average dollar of the current year; original income statement expressed in year-end dollars.

Individuals who read *Basic Concepts And Standards* with any degree of care will acquire a reasonable understanding of both the nature of the price-level problem and the corrective procedures suggested. Mason has thereby rendered a real service to the business and accounting communities. There are two points in Mason's

presentation, nevertheless, to which this reviewer takes exception.

(1) On page 11 it is stated that "Although income taxes under the present law will not be changed if adjusted income figures are prepared, evidence will be obtained that income taxes are now based on a concept of income which is questionable and which, in particular, discriminates against companies with large investments in plant and equipment when the price level is rising and in their favor when prices are falling." This represents a common misunderstanding in dealing with the price-level problem. The company that invests its money in stocks or bonds, or which even maintains its funds in the form of cash, is just as much discriminated against as is the company that has a large plant and equipment investment. The problem is the same in every case in which an unadjusted dollar commitment is matched against revenue or return figures expressed in "depreciated or appreciated" dollars. The result is either a figure larger (or smaller) than the amount of the purchasing power income, or the non-recognition of purchasing power gain or loss. Actually, the form which the asset investment takes is of little or no importance; the consideration of importance is the capital investment. The tax discrimination which takes place is rather between investors whose investments are made at different historical dates. When the price level rises investors who made their investments in more valuable dollars are denied the right of restating them in terms of the prevailing depreciated dollar. Hence, the adjustment amount is treated as taxable gain at the time of sale or conversion when it is actually capital recovery. Investments made with less valuable dollars are not subjected to equal disadvantage. When the price level falls investments made at earlier dates contribute to loss deductions or lesser profits at the date of their sale or conversion; investments made at later dates in more valuable dollars are subject to differential tax effects.

(2) While the text material distinguishes between realized and unrealized purchasing power gains and losses (p. 9), no differentiation is made between them in the illustrations set forth (pp. 14–28). Realized gains and losses are either ignored or are netted with the unrealized gains and losses. Purchases (p. 16), other expenses (p. 18), interest costs (p. 18), and the like are assumed to be expressed in terms of the average price level prevailing during the year. Insofar as these, and other, costs were paid by using dollars acquired at an earlier date realized losses were suffered at the time of their payment. Realized losses were also suffered as the receivables were collected and gains realized as the liabilities were paid. The net result, a realized gain or loss, is nevertheless not specifically set forth. The net current monetary position existing at the beginning of the year is converted as though its constituent elements were not subject to transactional ebb and flow throughout the period. Although the amount involved in the present case may be immaterial and therefore not justify specific treatment, the net realized purchasing power gain or loss could be an important influence in managerial action.

In the illustrations the net purchasing power gain is treated as a retained income (deficit) adjustment. An accompanying footnote states that a difference of opinion exists as to whether the purchasing power gains and losses are income statement items or should be treated as retained income adjustments. Commonly, however, it is the treatment of unrealized gains and losses which is subject to question.

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John G. Simpkins, *Accounts From Incomplete Records* (London: Gee & Company Limited, 1956, pp. 76, Price 15 shillings).

In this short work Mr. Simpkins explains how a practitioner can proceed by applying the theory of double-entry bookkeeping to construct accounts from records which are deficient or even partially non-existent. He also suggests approaches to the solution of some of the more advanced problems following in the wake of inadequate records.

The author indicates that inadequate records are not only found in small businesses but also in some well-established firms so that the practitioner is almost continuously confronted with this problem. Even in a company with adequate records, there is an ever-present threat of the problem since some physical disaster may occur.

The greater part of the book is devoted to the presentation of a systematic approach which can be followed in incomplete record cases. This includes a detailed consideration of the work to be undertaken and is amply illustrated to clarify the author's recommended procedure. Appropriate emphasis is given to the fact that in cases of incomplete records there will not be any books to resort to for additional information. Because of this the author states that it is more imperative that all data relating to basic transactions should be identified and the working papers kept as completely as possible so that the practitioner can facilitate his current and future work and provide something in organized form which a tax auditor or other outsider could review.

While the author deals primarily with the procedures involved in constructing supporting figures for balance sheet and profit and loss presentations, he also stresses the accountant's responsibility for providing supplementary comments and statistics about the enterprise and the making of recommendations to improve the keeping of certain basic records and transaction documents.

The problem of fitting the revised system to the realities of the number and quality of personnel available to operate it is considered. The author indicates that a minimum set of records should consist of a cash-

book plus a thorough accumulation of the routine sales and voucher documents and the relevant documents for more unusual types of transactions.

The author points out that a trader should regard his accounts as having more usefulness than to just support his income tax return. He should be shown how statements of financial position can be used to facilitate proper financial planning and how his profit and loss account can be analyzed to provide clues for management action which will improve the profitability of his business. The accountant must strive to educate his client not only as to the repetitive and required uses of his accounts, but also as to the potential uses such as: the raising of capital; the sale of a business to another or its conversion to a limited company; the determination if its value (or someone's share of its value) for estate purposes; the provision of information for investigations made in case of financial difficulty or insolvency; and the support of insurance claims.

This book should be especially helpful to the student who has dealt only with double entry procedure and theory and has never encountered incomplete record situations. The book will also be useful to the practitioner who has not encountered many inadequate record situations.

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Standards of Education and Experience for Certified Public Accountants (Ann Arbor: University of Michigan, 1956, pp. xxiii, 151, $2.50).

This report is the result of a recent four-year accouchement of a "Commission on Standards..." promoted and largely financed by the American Institute of Accountants. The Commission, after a slow start and a change of research directors, floundered for some time in a murky sea of dissent and finally managed a surprisingly good job. Its chairman, Donald Perry (of Lybrand *et al.*, Boston), received the Alpha Kappa Psi award at the Seattle Convention of the Association in recognition of this achievement.

The Commission's 24 members included 13 practicing C.P.A.'s, 5 deans or former deans of schools of business administration and six professors of accounting. They were Elmer G. Beamer, Herman W. Bevis,* Ralph L. Boyd, Thomas H. Carroll* Richard S. Claire, Clem W. Collins, Robert L. Dixon, Ira N. Frisbee, Paul Garner, Raymond E. Glos, Clifford V. Heimbucher, Richard L. Kozelka, Thomas W. Leland, J. Cyril McGarrigle, the late Hermann C. Miller,* Carroll V. Newsom, Donald P. Perry,* R. G. Rankin, Emanuel Saxe, J. S. Seidman, Frank P. Smith, A. Frank Stewart, William W. Werntz,* and Robert E. Witschey.

The report's basic problem—an acrimonious and anachronistic debate over education versus experience—is resolved by compromise, in which Frank Smith as eventual study director played a large part.

There are five pedestrian "background" chapters, along with which one should read the Institute's *General Recognition of Accountancy as a Profession*, by Arthur Tourtellot, for the latter provides an excellent review of parallel problems and approaches of the legal, medical and accounting professions.

In chapter six (separately and widely distributed without charge) appear the Commission's "Summary and Recommendations." These are in two parts: Transitional and Long-Range, as follows:

"*Transitional Program*" of recommendations for uniform standards for granting of the C.P.A. certificate:

1. College graduation, including completion of an accounting major as part of the undergraduate program, or college graduation, supplemented by completion after graduation of the equivalent of an accounting major.
2. Satisfactory completion of the Uniform CPA Examination.
3. A minimum of two years of practical experience in public accountancy under the guidance of a CPA.

"*Long-Range Goals*"

The Commission's recommendations represent an attempt to formulate standards of education and experience for CPAs, which will be adequate to meet the prospective needs of the public and of the profession. These recommendations envisage in the coming years the development of educational programs designed specifically for public accountancy, a qualifying examination to assist educational institutions in the selection of candidates for the professional program, and a nation-wide system of accreditation of the proposed professional programs. All of these developments lie ahead and one or more decades may be involved.

1. College graduation
2. A qualifying examination
3. A professional academic program
4. An internship program
5. The Uniform CPA Examination

The gist of these recommendations is in the shift of emphasis and responsibility from practitioner-directed experience to formal educational programs. The very inevitability of such a conclusion must make it "generally acceptable," and it is my own impression that it is being so received. The colleges provide the only real pool of talent for recruitment into the profession at the present time, and some 80% of entrants now are college graduates. As the Journal said last July, "The days when the professions could expect apprentices to spend long years of drudgery at low wages in the expectation of middle-age success were doomed forever by the rapid growth of technology and need for professional skills."

It is true that this new confidence in higher education comes at a time when the latter is not particularly looking for new business. The pressure of mounting enrollments and the "general education" movement alike will cool many an institution's desire to establish new professional schools. This attitude will especially apply to the study of anything so sinfully technical, even vocational, as accounting.

On the whole, it will be desirable if such professional schools do not proliferate but rather are formed at the graduate level in a relatively few able institutions—50 to 75 should be plenty. Let the rest of the colleges of

* Executive committee.

business concentrate on the AACSB's meritorious high ratio of liberal and general business education. It is my own opinion that the new professional accounting schools should be independent of these undergraduate schools.

There is yet a wide gap between the body of communicable knowledge presently available for a professional school of accounting and that which is traditionally associated with such schools in medicine and law. Thus, there is a continuing need for supplemental training by experience. The long-range program for accounting is quite *long*-range.

It is good news that the Commission recommends admission to the examination after education and before experience. Like any examination, this one tests what is in the examination and it is essentially academic in nature. It should be taken when one is ready for it—not several years later. I am all for an accreditation program for the schools, as is the Commission, and a good start would be publication of the results on the CPA examination of accounting-major candidates for various colleges.

I am also all for an accreditation program for experience. Mere breathing in a public accountancy office for two years or for that matter on a College Campus for a while is not necessarily educational. I think also that the limitation of experience credit to *public* accounting is unwisely and unfairly restrictive. The Federal General Accounting Office offers an example of some very high-order accounting and auditing experience in certain of its activities, and this experience is now recognized in some states, and probably should be recognized with regard to various other Federal, state and business institutions. The nature of the experience and not its site should be the determinant of recognition for professional status.

The CPA examination under either program would be much different than at present. It would, however, be definitely aimed at testing graduates of accounting and related curricula and would serve, as indeed it does now, to provide general guide lines for such curricula.

It should be born in mind that we are dealing with *entry* into a profession. The program does not have to prepare the candidate for everything he will ever have to do. No amount or combination of education, experience or examination will guarantee production of the mature professional man.

A program of professional preparation should, however, limit professional accreditation in the public interest to those of reasonable and pertinent qualifications. It should facilitate the flow of an adequate number and quality of individuals into professional practice. And it should afford the interested youth a fair opportunity to enter the profession of his choice. These interconnected goals are capable of attainment with the Commission's program. Profession and public alike have been well served by the Commission's efforts.

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Economics and Finance

GUY HOSMALIN, *Investissements, Rentabilite et Progres Technique* (Edition Genin—Librairie de Medicis, Paris 1956, 250 p. Fr. Frs. 1500).

The French literature in the investment field is not very abundant. The author bases his study predominantly on American sources. His bibliography bears the resemblance to a list of required reading for students majoring in economics at an American college. It is certainly a gratifying feeling to see that young French economists are very familiar with our literature and have recourse to it in their research. Mr. Hosmalin's book conveys the impression of a carefully prepared doctoral dissertation; this, however, does not detract from its merits. The book has been placed on the market under the auspices of professor Jean Marchal, of the faculty of Law in Paris. In France economics is still considered to be a part of the curriculum of legal studies.

The first part of the book deals with the conceptual analysis of investment opportunities, the second part with the theoretical methods of estimating profits and the rhythm of technical progress, and the third and last part with profitability estimates, as they are made by entrepreneurs. The study of methods is mostly based on Professor Lutz's work on the theory of investment of the firm. The author is of the opinion that some of the recent studies in the field of investment theory do not grant sufficient attention to technological progress. He asserts correctly that the long term growth of any enterprise depends upon the proper appraisal of the technological progress and justifies his study by the necessity to provide a thorough survey of the field on a micro-economic scale. The author deplores that the theoretical basis provided by economists gets little consideration and that the practitioners proceed by the rule of thumb.

The gist of the author's observation is that private investments do not always coincide with the interests of a country as a whole. Though large corporations endeavor to think on a national basis, the complete reconciliation of private and national interests is difficult to achieve. The antagonism between the interests of private enterprise, geared towards profits and the interests of the community, can only be eliminated by planning. This antagonism is only briefly discussed on the last few pages of the book and this reviewer was left with the feeling that a whole avenue of thought remained untouched; for instance, the waste caused by over investments by several firms active in the same field.

In general, Mr. Hosmalin's book is a comprehensive, careful and competent product and may prove useful both to the academic world in France and to the industrial executives concerned with investment problems.

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EDMUND WHITTAKER, *Economic Analysis* (New York: John Wiley & Sons, Inc., 1956, pp. x, 460, $6.50).

Professor Whittaker, favorably known for his work in history of economic thought, has now written a text in economic theory at the intermediate level. If there is a single outstanding characteristic in this book, it consists in the philosophical, calm and judicious manner of considering topics. Consonant with this approach is his tendency to use graphs rather freely without finding himself trapped into a point of view because it is easily expressed in graphical form. That is, the author conveys the impression of one who uses models, rather than one who is used by them.

From the author's prefatory remarks, as well as the tone and structure of the book, it is evident that the text is designed primarily to teach economic habits of thinking. In the first part of the book, which the author regards as being of central importance, the scope and method of economic analysis is carefully and lovingly explained. Analytical examples support and give specific content to the ideas set forth. In his chapter on the "Interpretation of Experience" the author launches into a multiple correlation analysis of demand. This section leaves me torn between approval for the introduction of concrete methods of handling demand and disapproval for the introduction of materials largely extraneous to economics proper. Furthermore, the student is not told precisely how to compute the cross product terms X_1X_2 etc. in table 7 on page 67. To find out how to do this he will have to refer to a text treating multiple correlation. In short, the text is not completely self-contained. If this deficiency is anticipated by the instructor, the question remains whether this material is appropriate. My inclination is to exclude such details from a text of this sort, but treat them in an econometrics text oriented toward the development of concrete models of economic behavior.

In the second section of the book, which constitutes its greater part, the author applies the methods developed in the first section to various problems. In the choice of topics he is fairly conventional—covering general equilibrium, consumption, capital theory, production, price, national income, distribution of income, and economic progress. A separate chapter is devoted to the choice of the level of work and income, a rather unusual choice for a separate chapter.

In a qualitative sense the author's treatment of topics is characterized by an easy, rather lucid style. When the subject matter is quantitative in character the author leans to diagrams. On the whole illustrative tables are rather scarce, a fact which makes for pleasant reading. However, in many cases a diagram can only be fully understood by the student when used in connection with corresponding tables. In view of this, the teacher must supply appropriate numerical problems from time to time. In a sense this implies that at some points the book is not entirely complete. If this is a defect, it is counterbalanced by the broad and sane approach to economic problems which the author manifests.

The balance of subject matter in the book is good except perhaps in one respect. Strictly macro-economic analysis or national income and business cycles analysis constitutes but a ninth of the material. On the whole, this seems to represent an underestimate of the importance of this type of subject matter. In view of the practicality and applicability of this material it seems to me to warrant greater emphasis. In practice, it may prove undesirable to include *any* income theory in a one semester course, but it seems advisable to devote a good part of a second semester to macro-economic problems. A comprehensive text should be designed with this point in mind.

As a final remark, it seems desirable to mention that the discussion of method is extensive and basic in the plan of the book. In essence, the author's basic concern is to lead the reader into suitable habits of thinking in economics. In line with this approach the study of the principal matter is deferred to a second section. Such a procedure has much to recommend it, since the scope of economics now overreaches the time limitations imposed by a one or two semester course. On the other hand, some readers may prefer to plunge into their subject matter after a brief methodological introduction. In this manner one gains a start in subject matter through a sacrifice in the philosophical underpinnings. The reviewer confesses to a preference for the latter approach on the ground that economic method gradually soaks in during a course of study in economic principles.

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Electronics

HOWARD S. LEVIN, *Office Work and Automation* (New York: John Wiley & Sons, Inc., 1956, pp. 196, $4.50).

Levin has written an extremely interesting, stimulating, and useful book. It is a non-technical presentation for top executives, controllers, practitioners, office managers, teachers, and students. The author clearly and concisely sets forth a basic introduction to the automation of office work.

The office is portrayed as "a factory which manufactures the elements of business decisions." If the flow of data through collection, processing, and use is skillfully and systematically coordinated there will be produced "more effective business information." The author explores ways of doing this in 5 well-organized chapters and 196 fast-moving pages. Sketches and flow charts are scattered throughout the book, supplemented by several interesting problems and analyses, thus adding considerably to one's understanding and enjoyment of the text.

Chapter 1 is an attention-catching introduction to the book. Definitions, clarification of terms, and highlights of chapters ahead are capably set forth. The point is clearly established that the operation of an office can be a productive activity. To accomplish this, however,

the author drives home the necessity of determining basic information requirements and relating to this a practical understanding of the most efficient tools and skills needed to produce the required information at reasonable cost.

Chapter 2 discusses the gathering and recording of information, common-language office machines, and their various applications within the area of integrated data processing. Here we are introduced to data processing as accomplished by punched cards, paper tape, and magnetic tape.

A most interesting observation is made by Levin in his suggestion that economy can be gained in office operations by the elimination of as many key strokes, or key depressions, as possible. The more one thinks on this point the more significant becomes its implications and its impact. Actually it is the basis of the automation concept and the developments within this challenging field.

Electronic computers and their use in data processing are discussed in Chapter 3. This is a long chapter but it is full of descriptive information. It opens up many applications for computers, discusses how they can be used, and the size or type of computer best able to meet the specific need. Several important factors are stressed all pointing consideration toward the desired objective of better information, more quickly and efficiently furnished, at lower net cost.

Chapter 4 introduces the intriguing and far-reaching topic of "operations research" in an interesting discussion. "Applied common sense" is one way of putting this new field of the application of scientific approaches to business problems. Sampling, statistical inference, and mathematical programming are explained and effectively illustrated.

The concluding chapter vividly sets forth the social and economic implications of the changing office. Levin does not view the changing office with alarm. He does, however, caution us all to see that this inevitable technological progress is made a force for the greatest good. Particularly valuable to top management is the discussion of organizational considerations such as centralization versus decentralization both of business operations and information handling.

In the reviewer's opinion some technical descriptions of methods and equipment fall short of their intent, undoubtedly due to the author's attempt to oversimplify or condense them. Further, the author underemphasizes the importance of the time factor—in overall planning, in manufacturing and installing equipment, in selecting and training personnel, as well as timeliness in furnishing desired information—by frequently dwelling only on the objectives of effective information economically produced.

Recognition must be given to the fact that this book is designed to meet the objective of awakening the nontechnician's interest. Only the high spots of a complex subject can be touched in such a volume. The mentioned deficiencies might well become the focal points for a subsequent treatise or volume.

Levin states in his foreword, "this book will have served its purpose if members of the management profession find within it balanced proportions of information, encouragement, and caution." The book does meet its purpose.

If widely distributed and even hastily read by managers, technicians, teachers, and students, it will do much to advance the fascinating and effective field of automation in the collection, processing, and use of information in the office.

There are enough idea-stimulants in this volume to very well change the future course of any business whose top management takes the time and interest to study its pages. From this point management can proceed into further research on its own, or rely on professional consultants to any extent deemed desirable and feasible.

Levin's book deserves a generous "well done."

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WALLACE, FRANK, *Appraising the Economics of Electronic Computers* (New York: Controllership Foundation, Inc., 1956, pp. 104, $4.00).

The purpose of this brief research report prepared by Wallace, a partner in a public accounting firm, is to develop a "common sense, business appraisal of computers." It does not attempt to give answers, but develops a point of view and an approach helpful in planning action.

Emphasis is placed on introducing computers to reduce clerical costs with little consideration for developing better information for management or making operations research studies. Appraisal of a computer as another piece of capital equipment involves determining whether new costs to be incurred are less than costs to be eliminated. A thorough study requires forming a computer team of several people to analyze procedural areas (for example (a) inventory and production records and (b) costs and budgets) selected on the basis of clerical costs, simplicity for programming, intangible benefits, and effect of centralization upon data transmission costs. Detailed analysis of a system involves flow charts, volume studies, and cost determination to define activities for introduction of new equipment. Improvements can, it is said, be derived from systems study even though existing equipment is retained.

The computer feasibility study requires filling in detail (hardware, personnel, operating loads, and programs) to develop projected costs for comparison with present costs. The most economical system should be selected, although the intangible benefits obtainable may be decisive if costs are not greatly different.

Wallace also deals with the problems of installation and operating costs. An appendix deals briefly with the concept of a computer, application of medium and large scale systems to payroll and labor distribution, equipment commercially available, and operations research for management.

Wallace's report is rather narrow because it focuses attention on clerical cost reduction almost to the exclusion of other benefits. Computers, as equipment, seem

to be over-emphasized in relation to the data processing system and environment in which they operate. Capital investment models, which place a time value upon present as opposed to future expenditures, and which propose specific criteria for an acceptable investment are not dealt with.

Wallace, nevertheless, in his brief report summarizes rather well existing business practices for computer appraisal.

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Taxes

HARRY M. HALSTEAD, *Federal Income Taxation of Farmers* (Philadelphia, Pa.: American Law Institute, 1956, pp. iv, 129, $2.50).

The market today is full of publications on most phases of taxation. This is true because of our high progressive tax rates and the large portion of profits which are paid out in taxes every year. More and more attention is being focused upon the income tax in all phases of business.

Farmers have many problems not encountered in other lines of business endeavor. This is why there are many publications coming off the presses relative to this special field of business enterprise.

This book is one of a series of publications by the Committee on Continuing Legal Education of the American Law Institute on federal income taxation for general practitioners. It is written in easy-to-read nontechnical language and contains many well-selected references. A good deal of research has gone into its writing as indicated by these references. Too often publications are prepared without this very essential characteristic. This book is not just another commentary on income taxation because of its coverage, style, and documentation.

An outline of the basic contents of the book is as follows:

Definitions	7 pages
Accounting methods	34 pages
Gross income	26 pages
Section 1231	30 pages
Business deductions	28 pages

A situation that causes considerable controversy in the field of taxation is that of the hobby farmer. The author has listed in the section on Definitions some important considerations in dealing with these cases.

There are several elections to be made by taxpayers when filing first returns. It is very important that these elections be made timely and only after consideration of the possible future effects. The author has done a good job of listing advantages and disadvantages of the various methods as well as comparing of them. This section is of particular importance if the practitioner is fortunate enough to be consulted before binding elections have been made by the taxpayers.

The problem of changing accounting methods is a very frequent one of those who serve farmers. There is a concise exposition of the requirements and probable adjustments to be encountered in such an undertaking.

The gross income of a farmer is quite unique and different from the usual situation encountered in the business and academic worlds. The various elections available and special provisions are set forth in good understandable order.

Section 1231 is of great importance to all farmers because of its broad application to farming operations. For the needs of a general practitioner the author has covered the subject well. This part of the book has many informative and pertinent references.

The business deductions of farmers are somewhat different from those of other businessmen. The usual items are discussed along with some of the more complex ones such as casualty losses and operating losses.

Unfortunately the Regulations for the 1954 Code are not yet available. Consequently most of the references are to Regulations 118. Code references are to the 1954 Code except in special instances. These references to both the Regulations and the Code are very valuable for quick reference and study.

Reproduction of tax forms are of little or no value in a book of this type. Fortunately only four pages were used for the showing of a 1955 Schedule F (form 1040). If such an inclusion were considered necessary, a current schedule would have been more desirable.

This book is very readable for the general practitioner regardless whether he is a Certified Public Accountant or an Attorney. It is not a book of mechanics or technical terminology and academic situations. The book is written in good narrative style and is easy to read. It is a pleasure to find a book with so much good reference material that is written in a style that can be read and understood as easily as a novel. It is not a book of the details of tax and accounting computations and is not intended to be.

The book is a very desirable reference for those in a position of advising farmers on their tax problems and business operations, but it is of little use in the actual preparation of tax returns. It is a good reference and library work.

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ROBERT S. HOLZMAN, *The Tax on Accumulated Earnings*. (New York: The Ronald Press Company, 1956, pp. v, 136, $10.00).

Anyone interested in the development of the present status of the tax on accumulated earnings, sections 531–

537 of the 1954 Internal Revenue Code, formerly section 102 of the 1939 Code, will find this short book of inestimable value. The author has very carefully stated the problem; he has reviewed all of the cases which have been decided by the courts on the sections involved; and he has classified each of the cases both on the basis of the issues involved as well as on the basis of industry classification in terms of the kind of business the taxpayer was pursuing. Finally, the author develops an analysis of the steps which should be considered by businessmen and their consultants in attempting to avoid, or at less to mitigate, the effects of the surtax on unreasonable accumulations.

It is interesting to note that the basic tax is not a new revenue source in either the 1954 or in the 1939 statutes. In essence, the tax on accumulated earnings dates back to approximately 1921, although it has undergone many revisions. Probably the portion of the book which will be of greatest interest to accountants is the analysis which the author makes of the steps to be considered in attempting to avoid the severity of the tax. It is obvious that the simplest way for management to escape the surtax is through the timely declaration of dividends in sufficient amounts so as to avoid raising any doubt in the revenue agent's mind that the tax on dividends in the hands of the recipient is being avoided. On the other hand, as the author indicates, the payment of dividends is not always the wise thing to do from the corporate point of view and therefore it is important to understand how accumulations might be made safely and what steps ought to be pursued to justify the accumulations to the satisfaction of the reviewing agent, the tax court or the other judicial bodies which might become involved in a settlement of these issues.

Some of the more important steps to be taken by management are developed by the author. Among these are the following:

1. Ascertaining the true surplus—Although the tax is imposed upon taxable income (as described in section 535 (b)), it is nevertheless important for a corporation to determine its actual accumulated surplus. The surplus balance per ledger may be meaningless for this purpose. Surplus is the CORRECT ledger figure adjusted in accordance with the tax code. For example, such sections in the code as 311, 312, 381, and 482 would have a bearing on this matter.

2. Corporate minutes—Even though the burden of proof in a case involving these sections of the code may be shifted to the government, nevertheless, the taxpayer must still be able to explain from contemporary data why dividends had not been paid or why the directors had not been more generous. It should be clear that one of the best sources to look to for an explanation of the intent of the directors would be the minutes of their meetings. It is important to note that the minutes need not indicate legal draftsmanship of a high order nor is the phraseology of vital importance nor is the presence of lawyer's language essential. The significant point, as indicated in the cases, is that the minutes do explain and clarify the thinking and the reasoning of the board in determining the size of the dividend or in explaining the reason for a failure to pay one.

3. Annual Reports—Another important document in which to record a contemporary reason for the retention of earnings is the annual report of the company. Here, too, it would be wise to make reference to the dividend paid or to briefly explain the intent of the board in failing to declare one for the given year. Certainly it would be helpful to explain in the annual report the intended utilization of the accumulated surplus. It might be worth while, also to indicate that there was no dominant stockholder and that no member of the board owns enough stock to profit unduly from corporate retention of earnings.

4. Advice of experts—Although the directors are responsible for the final determination of dividend policy, in most cases their conclusions are based upon recommendations made to them by outside parties, including accountants. The record should clearly indicate the fact that the dividend policy in a given year was based primarily upon such recommendations, where such is the case. Certainly the directors may be influenced by the findings of business consultants and a clear indication that the advice of such consultants was relied upon in the determination of dividend policy may serve as a basis for explaining the retention of earnings on grounds other than the avoidance of the income tax by the recipients of the dividends.

5. Minimizing the danger—As indicated earlier, the easiest way to avoid the dilemma of section 531 is the payment of dividends. However this solution is not always desirable or even possible. Among the other factors to be considered in this connection is the choice of fiscal year. From the point of view of section 531 a question may well be raised as to whether the fiscal year should end at the point of lowest normal activity since it is at that date that the liquidity of a business is at its greatest. Other factors which might be considered in this connection are the intelligent use of a contribution accrual under section 170 (a) (2); the utilization of the thin corporation; the use of stock dividends or consent dividends; token dividends; commitments in the form of purchase orders, and contracts; and such other factors as expansion, financial hazards, unusual economic conditions, peculiar industry conditions, existence of a large debt structure, imminent asset replacement, and so on.

The book is well written and the author employs an easy style. The arrangement of the cases by issue, together with the essence of the decision in each case is particularly good. The work is one that every accountant should read and have in his library.

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